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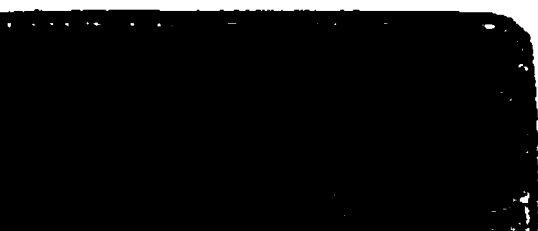
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THE  
DUBLIN JOURNAL  
OF  
MEDICAL SCIENCE.

EDITED BY  
JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. DUBL.;

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND;  
SENIOR PHYSICIAN TO THE MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY;  
CONSULTING PHYSICIAN TO CORK-STREET FEVER HOSPITAL;  
EX-SCHOLAR OF TRINITY COLLEGE, DUBLIN;  
FELLOW OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON.

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# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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JANUARY 1, 1898.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. I.—*A New Method of Nephrectomy.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

THE case which follows is the sixth successful removal of suppurating kidney which I have carried out after trans-peritoneal examination of the opposite kidney. My colleagues, Mr. Tobin and Dr. Alfred Smith, can bear testimony to the ease with which the tumour, however large, may be enucleated through the incision which I advocate, and to the absence of any subsequent peritoneal mischief. The recent cases I have exhibited at the Royal Academy of Medicine in Ireland, and the extensive lines of incision, showed not the slightest evidence of yielding, so that no hernial protrusion need be dreaded.

For the notes of this case and the line drawings I am indebted to my assistant, Mr. Fagan, of St. Vincent's, and for much of the success attending these operations thanks are due to the gentlemen above mentioned.

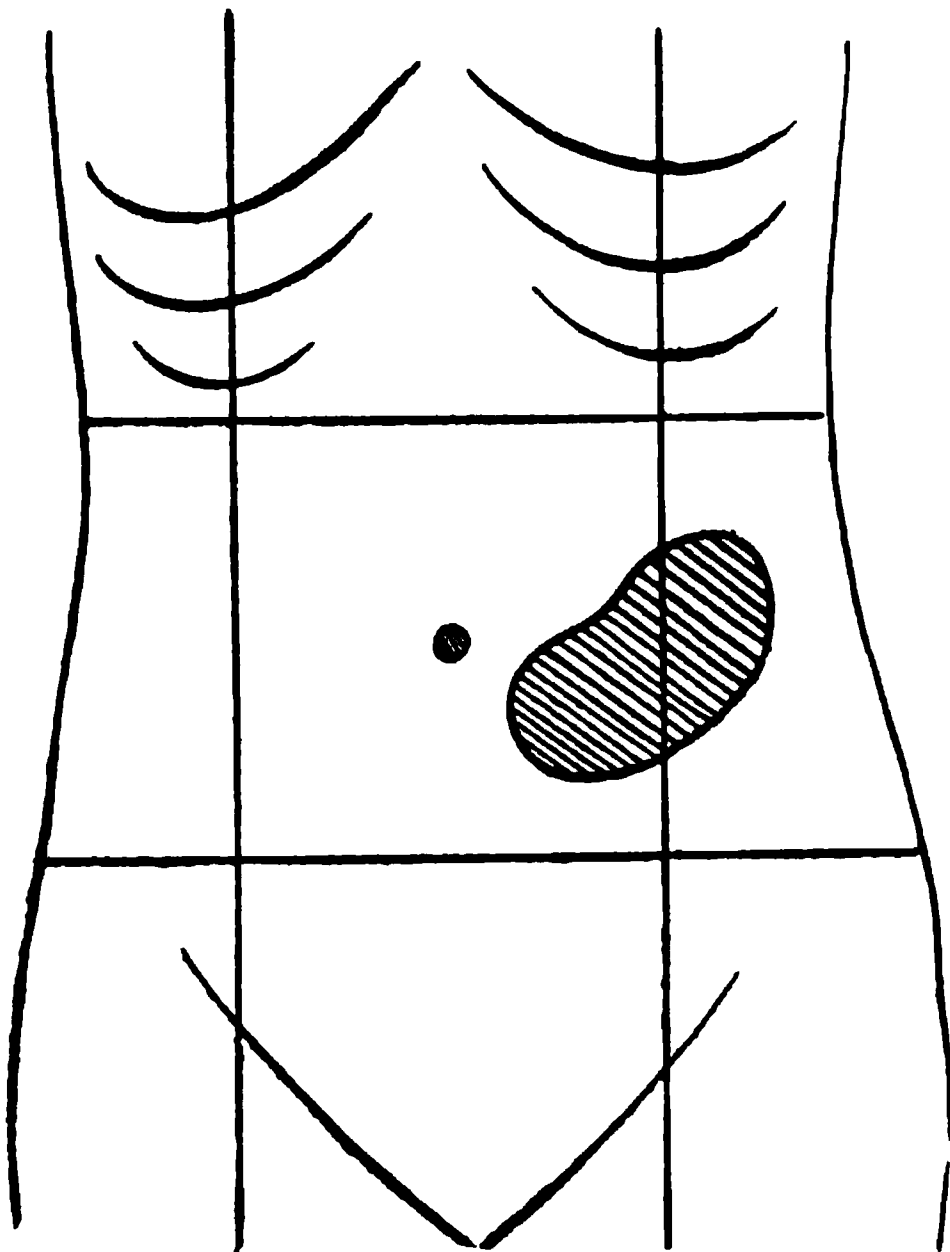
CASE.—*History.*—M. G., a spinster, now in her fifty-third year, comes of a healthy stock, and has herself, throughout a life of hard manual work, always enjoyed excellent health until nine years ago, when, one day, whilst breaking a sod of turf across her knee, she felt something snapping, and giving way in her left side. Since that time she has occasionally been troubled with gnawing, aching pains in the same side over the lower ribs. Within the last five



years she slipped three times on the ice, each time falling on her left hip bone. At the time of the first fall she felt something shaking in the small of her back. During the last three years she has been progressively growing thinner, and has suffered a good deal from constipation and flatulency, depression of spirits, loss of sleep and strength. Dry retching set in about ten days ago, and continues to the present time. She has not menstruated since she was forty; has never experienced any difficulty in micturition or pain in defæcation.

*Present Condition.*—The patient is a thin, sharp-featured woman with light chestnut hair and a complexion at present very muddy looking. Her disposition is fretful and restless. Her tongue is heavily coated. Pulse 120. Evening temp. 104°.

The left flank bulges slightly, and the left side of the abdomen is more prominent than the right. Lying in the left iliac and



F g. 1.

umbilical regions there can be felt a tumour, through the centre of which the left mid-Poupart line would run.

The tumour is bean-shaped, the notch directed upwards and

towards the right, slightly movable, and yielding on percussion a dull or muffled tympanitic note, varying somewhat with the condition of the colon. On pressure no disagreeable sensations or tenderness are complained of by the patient. Fluctuation cannot be detected, but elasticity is evident.

*Operation.*—I made an incision in the left semilunar line  $4\frac{1}{2}$  inches in length, opening the peritoneum sufficiently to admit the hand easily. Through this wound trans-peritoneal examination of the right kidney was made. It was found to be of normal outline, but considerably enlarged at the lower and anterior aspect. There was a small collection of fluid under the renal capsule. As I had met with this condition in several cases of floating kidney, and knew that fixation had removed it, I considered it was the result of the great engorgement caused by the overwork of the sound organ when the left one had quite failed to carry on its function. Being satisfied with the condition of the right kidney, I rapidly closed the peritoneal wound, and from the centre of the semilunar incision I

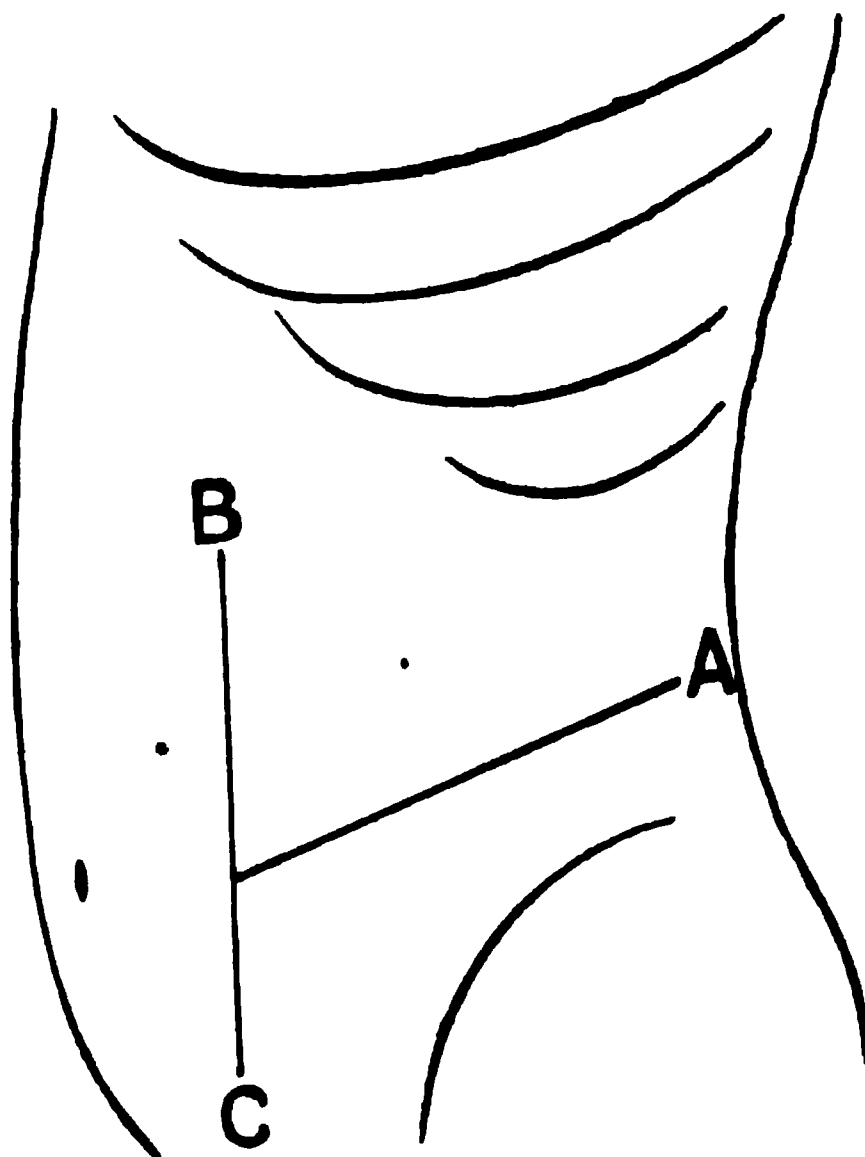


Fig. 2.

carried one backwards to the edge of the quadratus lumborum. This incision exposed the peri-renal fat at its posterior end, but in front reached only to the muscular layer of the abdomen. The

fingers of the left hand were now inserted into the posterior part of the wound, and gradually insinuated in a forward direction between the peritoneum and the transversalis fascia, as in Fig. 3.

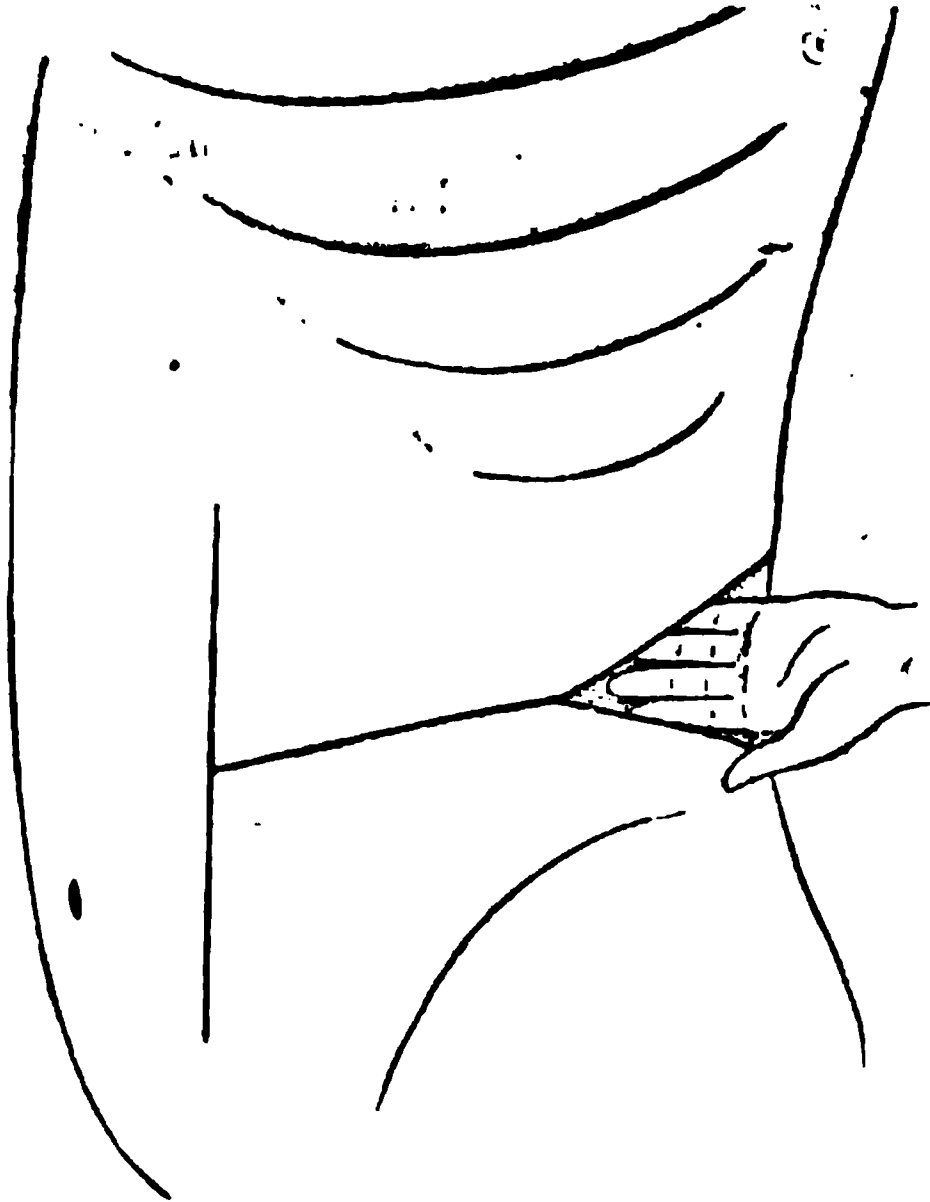


Fig. 3.

The separation was easy until the semilunar line was reached ; here it became necessary to leave a thin layer of the transversalis attached to the peritoneum, using long, flat scissors to complete the formation of the two flaps shown in Fig. 4. A stout suture now secured and retracted the flaps A B and A C. The peritoneum was dissected from the front of the kidney to which it adhered firmly. Here and there it became necessary to leave patches of the capsule to protect the peritoneum, as pus was welling up on all sides, necessitating continuous irrigation during the procedure. Once clear of the anterior surface of the kidney, the peritoneum readily separated from the pelvis, which was greatly distended but not much thickened, and the ureter came to hand easily. Now it was double ligatured, the mucous membrane was cut out of the lower end, which I sterilised with 1 in 500 bichloride solution, and dropped out of the way. The mouth of the upper end was secured with a clip forceps, then the posterior aspect of the kidney was freed to

within two inches of the upper end, where adhesions were very strong. In order to deal vigorously with these I secured the renal vessels by transfixing with a blunt hernia needle, and ligaturing as in ovariectomy. A gauze sponge placed under the kidney received the blood from that organ when section of the vessels was made outside the well-secured ligature. Next came a difficult part of the operation—the detachment of the fixed upper end of the kidney. The splenic flexure of the colon was with great care dissected off with portion of the capsule and pushed inwards, and still the organ

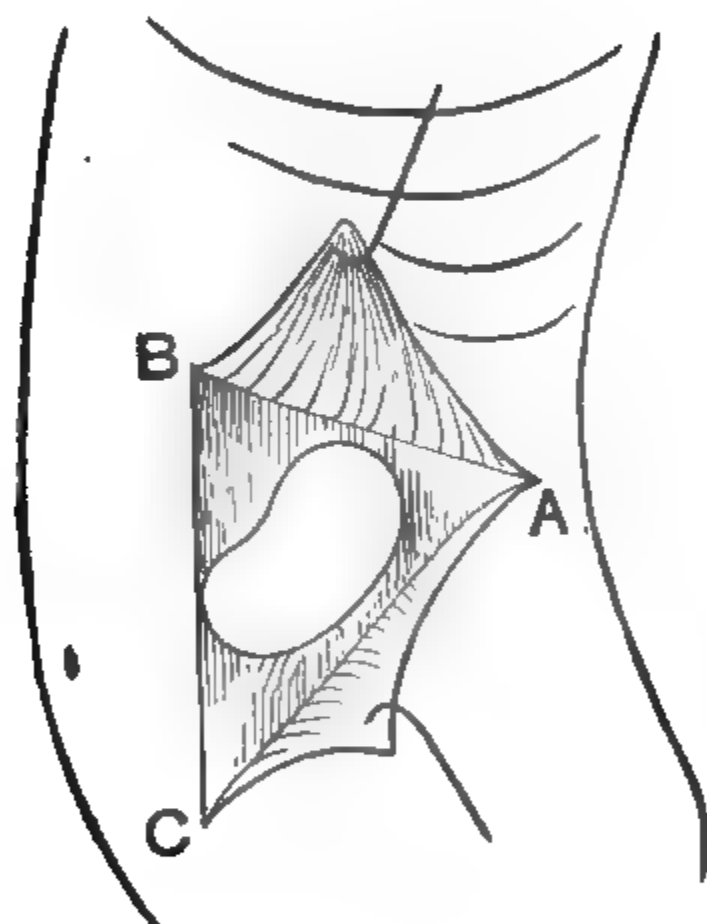


Fig. 4.

was fixed by a firm and very vascular pedicle above. The room given by drawing on flap A enabled me to deal effectually with this dense adhesion. I ligatured it near the kidney, and fixed it on either side with vulsella. Dissection of the kidney from this mass was now safe and easy. When the great suppurating tumour, into which the kidney had been converted, was extracted, I dissected the fibro-vascular mass referred to from the diaphragm with scissors bent on the flat, securing vessels as they were cut.

This operation is easy and rapid, owing to the room given by the free section of the abdominal muscles. Briefly the steps of the procedure are :—

1. Incision in semilunar line through entire abdominal wall.
2. Exploration of opposite loin.
3. Detachment of peritoneum along outer lip of incision, and closure of peritoneal cavity by suturing to inner lip by continuous suture.
4. The index finger is passed backwards and upwards from the middle of the incision, between the peritoneum and transversalis fascia, until it reaches the peri-renal tissues, where, with stout scissors, the abdominal wall is cut through in the line indicated in the previous drawing, or as in Fig. 3 from behind.
5. The triangular flaps, A B and A C, are now transfixed by strong silk and drawn outwards, while the peritoneum is gently pushed inwards with soft sponges.
6. A large, well-curved hernia needle, armed with stout silk, is now passed round the vessels and double ligature and section are carried out.
7. The hand is then passed round the kidney above, detaching it from its capsule, unless in cases of a malignant character. Freeing it now on the outer side and below, the organ is left attached only by the ureter.
8. The ureter is double ligatured and sponges are placed under it. Section between the ligatures frees the kidney entirely.

The advantages are:—

1. Examination of opposite kidney is allowed.
2. The peritoneum is protected from infection.
3. The retraction of the flaps gives ample room for manipulation.
4. Bleeding points can be seen and secured with ease.

The importance of trans-peritoneal examination of the opposite kidney has been so often demonstrated that it is, in my opinion, criminal to carry out nephrectomy without this safeguard.

The necessity of protecting the interior of the peritoneum from fouling is apparent to everyone, and how effectually that desirable object is carried out in this procedure is shown

by the results in six cases of suppurating kidney in which I have carried out this procedure. In no single instance was there the slightest evidence of peritoneal trouble. In all of them, as in the case here detailed, recovery was rapid, and restoration to health complete.

That it is desirable to have room for manipulations, especially those directed to the arrest of hæmorrhage, everyone conversant with the operation of nephrectomy recognises. No other incision so fully exposes the renal area and leaves you so completely master of the field of operation as this.

The extensive separation of the parietal peritoneum from the abdominal wall, as conducted in my cases, does not interfere with its vitality, because it carries on its surface its own vessels of supply,\* and it is only by dissecting it up you can destroy them, and thus cause necrosis. Where the peritoneum lifts off the peri-renal fat its vessels go with it, and it is only at the semilunar line there is danger of doing mischief. Here cutting away from the peritoneum secures its safety, and does not interfere with the subsequent closure of the middle stratum of the abdominal wall, which should be very accurately approximated, especially in front.

(To be continued.)

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ART. II.—*Some Points of Living Interest to the Teacher of Gynæcology and Obstetrics.*<sup>b</sup> By FREDERIC WILLIAM KIDD, M.D. Univ. Dubl.; Master of the Coombe Hospital.

I HAVE first of all to thank you heartily and sincerely for the great honour you have done me, through your Council, in electing me to be your President for the ensuing two years. As I look back at the long list of distinguished names who have preceded me in this honourable post, my heart almost fails me, when I stop to think how much must be expected of me in order worthily to succeed them in this chair. Workers all of them — either skilled operators,

\* The parietal peritoneum of the anti-renal region is supplied by a plexus passing from behind the colon, and ramifying in all directions in the subserous connective tissue.

<sup>b</sup> The President's Address read at the Opening Meeting of the Obstetric Section of the Royal Academy of Medicine in Ireland, on Friday, November 26, 1897.

### *Points of Interest to the Teacher of Gynæcology.*

successful teachers, indefatigable writers, or eminent practitioners—yet all with one common object while they filled this chair—namely, to advance the interests of this Section, and, by so doing, little by little to add to the world-wide reputation that our city holds as a school for the teaching of practical midwifery. When the history of the Gynæcology of the last ten years comes to be written it will be found that our Dublin School has not been standing still. We have many skilled gynæcologists amongst us of whom any city might justly be proud, the effect of whose energy and teaching upon the younger members of our Profession (if I be allowed to prophesy), may be, and, I hope, *will* be, gradually to elevate the teaching of Gynæcology to such a pitch that Dublin may, in the near future, be as renowned for the teaching of Gynæcology as she has been in the past for the teaching of Practical Midwifery. To be placed in a position where one may, even to the smallest extent, further such an aspiration is an honour indeed, and reconciles one to the responsibilities attached thereto. I shall endeavour to imitate those who have gone before me, and shall ask you indulgently to overlook whatever shortcomings I may be guilty of. I hope, with your kind co-operation, that the ensuing Session may be one of harmony and of mutual advantage, and that the work of the Session may in no way fall behind that of its predecessors, either as regards its quantity or its quality.

I take this opportunity of thanking you, the Members of the Section, for the kind way in which you endeavoured to lighten my labours for the past six years while I was your Secretary, and for the indulgence extended to my errors. Your Council have elected Dr. Glenn as my successor, and it needs no words of mine to assure you that the choice has been well made; the Section cannot fail to benefit by the vigour and energy which Dr. Glenn introduces into everything that he undertakes.

When the Council elected me as your President, the very important question presented itself to me, as to what should be the subject-matter of my address, or if it were wise to give an address at all. My mind naturally wandered over those questions, in connection with this branch of Medicine,



that were of special interest to me, with the result that I determined to give a short address—not a *résumé* of work done in our specialties, not a dissertation on any one operation or on any one method of treatment. I determined to lay before you some questions of living interest—questions which touched on the teaching of Midwifery and Gynæcology—questions which, to my mind, should meet with the attention of those who are engaged either in teaching, or who are interested in placing the teaching of Gynæcology and Obstetrics on a surer and firmer basis.

One of the innovations that we have to contend with is the “lady doctor.” Their difficulties commence with their medical education. These difficulties are greater in some centres of medical education than in others, and in some they seem quite insurmountable. As an Irishman, with a claim to some gallantry, I am proud to say that as we were the first to open the portals of the Profession to ladies, so were we among the first to remove the difficulties that presented themselves in the way of the lady student; and I have heard more than one of them say, who had had experience elsewhere, that nowhere were they better treated than in Dublin, and nowhere did they get such “fair play.” With regard to the teaching of Obstetrics and Gynæcology, I give it as my personal experience that I have never found the slightest difficulty in lecturing a mixed class; I have never refrained from discussing any necessary point because of the presence of the ladies. True, I may have been more careful in the choice of my language. This, I claim, would be rather an advantage, and would tend somewhat to elevate the style of teaching; indeed, I believe the presence of ladies in the class has a distinctly refining influence. With regard to their attendance on midwifery cases, as arranged here in Dublin, I have never known any lady student to be insulted even in the very poorest and most criminal localities; first mistaken by the poor for nurses, they are now welcomed by them more and more every day. This teaching of mixed classes must go on until the number of women students increases to such an extent as may enable them to have their own special hospitals. In Dublin, I am glad to say, I have never known the association of the different sexes in medical classes to

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lead to any undue familiarity, but have always found the ladies treated with respect and consideration.

Let us stop and consider for one moment what are the openings in our profession for a "lady doctor." In our special branches there is a very large field open to them in India, where the prejudices of caste condemn a woman to die rather than seek the professional assistance of one of the male sex; but here let me take the opportunity of expressing in the strongest language my disapproval of those women who go to India as medical missionaries, with only a smattering of medical knowledge—perhaps with the advantage of only a few months' training—whereas it is considered necessary to have five years' curriculum for those at home. Truly in this case "a little knowledge is a dangerous thing." Then at home what are their chances practising as obstetricians or gynæcologists? Taken all round I do not think there is much scope for them, and though I may be deemed to tread on dangerous ground, I would wish to state some of my reasons—these reasons, necessarily, being taken from the standpoint of the man. First, *custom*—Women have been accustomed for many years in our country to the obstetrical ministrations of man. However, this objection may be gradually overcome, as we see in the case of the lady student among the poor, and in the case of the district midwife, who, in normal cases, nearly always acts independently of the dispensary doctor. Secondly, *physique*—It would take a woman of very exceptional physique to stand the strain of a busy midwifery practice, not to mention the fact that often the act of delivery requires an exhibition of strength, applied in the proper direction, and not violating the motto, *arte non vi*, possessed by very few women indeed. The same objection may fairly be urged against the average woman—that she is but ill fitted for the prolonged strain of a tedious operation in gynæcology. Owing to woman's nature, essential physiological conditions, over which she has but little control, and which must, for the time being, deteriorate her qualities of energy and endurance, may prevent her from exercising her abilities to the best interests of the patient. Thirdly, *nature* has made women naturally suspicious of one another—far more so than man; and this very suspicion causes

a woman who is suffering, in most cases, to repose more confidence in one of the opposite sex. One woman has not the same amount of sympathy for another in suffering that a man has, especially in the suffering of parturition. True, a woman surely will detect where there is a false craving for sympathy quicker than a man, and is less likely to be imposed upon. Women, when ill, compared with men, have but little consideration for those of their own sex who are attending them—a fact that can be easily proved by the evidence of the nursing staff in any large general hospital. These are some of the reasons against ladies practising as specialists in obstetrics and gynaecology. On the other hand, there are some reasons why they may be deemed more suitable for these branches. What more natural than that a woman suffering from some uterine trouble should consult one of her own sex instead of a man. Women have a power of intuition more acute than men; they pay, perhaps, more attention to detail; they are more gentle and nicer in the use of their fingers as a rule, and easily receive tactile impressions. However, comparing these advantages with the objections, I think the latter preponderate to such an extent that with, perhaps, very rare exceptions we shall find that the generality of women doctors will not prove dangerous rivals to men in gynaecology or obstetrics. To divert a little—"What branches are open for women?" There is a very large field in the pursuit of pediatrics. Women understand children in a way that few men do, and they seem to gain their confidence sooner. Again, the female department of lunatic asylums is a field which is becoming generally acknowledged as especially suitable for them. The specialty of the "eye" is one that seems to me specially to recommend itself for study by women. In general practice, both surgical and medical, there is a section of the female public who will consult only one of their own sex. To this section, certainly, the "lady doctor" is an unqualified blessing. This section, originally small, doubtless will increase as lady doctors multiply, and as regards the final rivalry between the sexes for practice which means success, it must be settled by free and open competition, man having this advantage—that possession is "nine points of the law." Placing obstacles in the way of the

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“lady” is only calculated to make her determined to overcome them, and only defeat for a period the crucial test; to this object I would give lady students and doctors every opportunity, and many of them would find that the realities of practice fall far short of their ideal, however average that ideal may have been. Looking over the entries at the English medical schools I find that one ambitious and venturous lady has entered the London School of Medicine for Women as a student in dentistry. Should her aim be to excel in the mechanical branch of her profession she may be well fitted for it, but as regards the “extraction” branch I would not like to be the patient possessing a molar with crossed fangs that needed extraction. The very thought reminds me of a scene at a French fair—a young woman, seated on a high vehicle, with an old-fashioned “key,” extracting teeth. As adjunct to her art she had a band consisting of loud-sounding brass instruments and a big drum. When the victim ascended the vehicle, and while the operation was going on, it was quite impossible to hear the agonising yells from the patient, due to the vigour of the musical accompaniment.

In whatever sphere of professional life the rivalry is introduced it must exist as a contest conducted on equal terms, giving no more advantage to one side than to the other, and if lady doctors compete, and compete successfully, with their medical brethren of the sterner sex in any particular branch, the men must simply take a second place—*palnam qui meruit ferat*.

With regard to the teaching of the subjects under discussion in women, I myself have tried the experiment, and personally have had no substantial objection to offer. However, I was dealing with a particular case, and fancy that my experience is very different from what it would have been under any other circumstances. The argument “from the particular to the universal” in my case would be especially weak. Much of the objection is a sentimental one, but not all; to those who would hold up their heads and say, “Shocking that such a subject should be taught *by women to men!*” The natural reply is, “Not a bit more shocking than that it should be taught *to women by men,*” except that in one case

it is tolerated by usage and in the other it is not. Yet I will say that until many more of the prejudices of sex are broken down there are grave difficulties in the way of women teaching such a subject to men, and that at present their sphere should be limited as teachers to those of their own sex.

Having disposed to a certain extent of the lady doctor, I would now say a few words about her sisters—the ladies' nurse-tender and the midwife. In practice it will be found that these nurses work better under the medical administration of men than that of women. Whether this is an outcome of sentimental prejudice, owing to the secondary position accorded to women for so many centuries, or is a remnant of that "natural suspicion" to which I alluded before, I cannot say; probably it is contributed to by both these facts. I look upon the change in the type of nurse that has adopted the profession as a distinct advantage both to patient and doctor; but it is not always an unmixed blessing. Some of them are apt to forget that they should be nurses first and ladies afterwards, or, as a professional brother of mine aptly puts it, there are nurse-ladies and lady-nurses. On one occasion he sent for a nurse. She arrived at the patient's house late in the evening. When she saw the doctor she immediately told him she "was one of the X-'s of X-town, and that she would expect a hot supper." The doctor replied, "Oh! I see. You are a nurse-lady, whereas I wanted a lady-nurse. You had better take the first train home again in the morning." The former class have brought themselves into disrepute by requiring so much attendance, and insisting on having duties done by the servants of the house that they should do themselves in the capacity of nurse, the natural result of this being that in the middle social classes, where there are not many household servants, they dread the thought of the advent of the trained nurse, not on account of her fee, but on account of the extra amount of attendance required for her, and the way in which, I am sorry to say, she often upsets the whole household. If a nurse's duties in the house were properly done her advent should cause less trouble than before. That such a condition of affairs exists is due, to no small

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extent, to faulty education and a neglect to instil into the nurse what are the duties of her profession. Far be it from me to brand all nurses with this criticism; but I do state that the objectionable class is so numerous that patients in increasing numbers ask their lady friends to recommend them a nurse, stating as a reason for so doing that the doctor only knows how the nurse behaves during his visit, and cannot tell what their behaviour is like in his absence, or whether they may or may not be what is known as "comfortable" nurses in the house. This is due to some extent to the rush of a better educated class, who, perhaps, are in reduced circumstances, to join the ranks of nurses. This rush includes many unsuitable persons who, perhaps, in the present upheaval against home authority, or occasionally to escape from what is really an unhappy home, fly to nursing, as it affords them a refuge from their fancied hardships, a far greater independence of action, and, shall I say it, a far greater freedom in social intercourse with members of the opposite sex. In short, this candidate for "nursing honours" makes use of her opportunities to secure a home for herself by marrying some medical student, some needy practitioner, or some patient, whose gratitude is great and whose will is weak, when convalescing from some dangerous or debilitating disease. That many of them succeed is proved by the fact that among the professions pursued by women that of nurse stands at present far and away the highest on the whole list in the matrimonial market, the number of chances being proportionately nearly double that of the next.

These statements refer only to the unsuitable minority—women who know they have no taste for nursing—and what a purgatory nursing must be to those who have no taste for it! Doubtless there are many women—good women and good nurses—who have been married and make good wives; my remarks do not apply to these. Owing to these changes the Sarah Gamp, whose surrounding atmosphere oft conveyed a suspicion of alcoholic adulteration, has disappeared, and the nurse, always young, often pretty, uniformed and veiled, cuffed, capped, and fringed, has taken *her* place. Let us hope that in the interests both of herself and of her patient she may prove a lady-nurse and not a nurse-lady. At the same time do

not let me be misunderstood. I am in favour of the present improvement in the quality of our nurses. I have both respect and admiration for our nursing sisters for their untiring zeal, devotion to the interests of their profession and of their patients, and in many cases for a self-abnegation that is worthy of a great cause. Surgeons and physicians may boast of their cures and recoveries, of the advances made in their treatments and their operations, but let them not forget to be just and render honour to whom honour is due. How many of these advances could have obtained their present position without trained, skilled, and intelligent nursing? Our asepsis depends to a great extent on the asepsis of our nurses; and how few there are among us that have not had to thank the unremitting attention and encouragement given by the nurse for the recovery of our patient. A nurse conscientiously attending a case of diphtheria, small-pox, or typhus fever, surely deserves as much credit as the soldier on the field of battle. So much for the nurse in general. With regard to the nurses specially trained in our branch of the profession, there are two very different classes—those who confine themselves to private practice, and those who seek their livelihood as midwife either to a public institution or to a dispensary district. In the first case such nurses have almost universally the assistance of the doctor at the birth; in the latter case they seldom have. A nurse-tender should be afforded during her training special facilities for nursing gynecological cases, as such knowledge will be useful to her in her practice; but such experience is not so necessary to the midwife. The latter requires a good constitution and a thoroughly practical knowledge of not only normal labour, but often of many of the abnormalities which the ladies' nurse-tender may seldom if ever be called upon to exhibit. In order to meet this I think the education of a district midwife should be more thorough than it usually is. What is the usual experience? The midwife is sent for by the friends of the patient, possibly having to drive 7 or 8 miles on a borrowed cart. When the nurse gets there, if all goes well, well and good; but suppose severe hæmorrhage to occur before the delivery of the placenta, or to arise even after this, before this midwife could summon the assistance of the



## 16 *Points of Interest to the Teacher of Gynæcology.*

doctor, unless she knew what to do and did it the patient would die. I was asked more than once by my assistants why I asked nurses questions when examining them that they thought more suited to a medical student's paper. My reply was that many a midwife may be placed in such a predicament that she cannot "send for the doctor," and that the safety or even life of the patient may depend on whether the midwife, recognising the condition and knowing what she should do, does it. I look upon it that the greater insight you give a nurse into the dangers that are consequent on unnecessary interference, the better you are acting in the interests of your patient, and the less likely she is to assume a responsibility unless it becomes absolutely necessary. You will find that the nurse who advertises that she takes charge of cases without a doctor is only an ignorant, half-trained woman. It is the "little knowledge that is dangerous." I may here utter a word of warning to nurses in general—namely, that they should not act as advertising agents for those who trained them, and should never unfavourably compare the work done by some doctor whose case they are in charge of with that of some pet doctor of their own. Whilst nursing they must be staunch and true to the doctor under whom they serve, even though in their relative want of knowledge they may think him wrong. The doctor is responsible for the treatment of the patient and not the nurse. One of our Dublin doctors has tersely put it:—"For the time being stick to your doctor, even though you think him a fool." I believe the higher and better you train the nurse the less she will assume the ignorant rôle of attending without a doctor. Our poor are to be congratulated that they have the services of women so trained. I believe it holds true for both my countrymen and countrywomen that they have, by nature, an aptitude and resourcefulness in the presence of difficulty that stands them in good stead whether as midwives or obstetricians.

The system in vogue in England is very different. There, they as a rule have only the assistance of handy-women; certainly they oftener have the doctor in attendance. One of the great objections of the Midwives Registration Act is that it would tend to qualify as midwives a great number of

these so-called handy-women on account of the number of years they were practising—create really a new grade of practitioner who would enter into the lists in competition with the doctor, and whose standard for admission into its ranks, must be of a very low grade indeed. In the conduct of a case of midwifery in Ireland, if in the country parts, the responsibility falls on the midwife; if in the town districts, the responsibility falls on the doctor who has his nurse-tender working under him. A very important step has been gained here in Ireland, when the Local Government Board issued an order that in future no pauper nursing was to be allowed over infants and sick children in the unions. Thanks and credit are due to Dr. Smyth, of Naas, Dr. Kenny, our own popular City Coroner, and lastly, but not least, to Dr. Maguire, who, when doing *locum tenens* duty in the North Dublin Union, exposed a condition of things that was disgraceful in any country that laid any claim to Christianity.

This work must progress, and I look forward to the time when the very poorest in this country in their hour of need may be attended by well-trained, reliable midwives. As a teacher of midwifery and gynæcology, it has often struck me what an advantage the men have who take out those subjects in Dublin as compared with those who try to study them in England or Scotland. Wherein our teaching is admittedly the best is in the fact that students in Dublin get so many opportunities of learning these branches thoroughly and practically. I do not think that it is necessary to turn out every student with the knowledge necessary to do a successful Cæsarean section, but I am sure that the habits of cleanliness and asepsis which he is taught must be very valuable as regards the safety of his patients in the future. It is of use that he should know how to save a woman's perinæum, or, if it be torn despite every precaution, should be in the position to give it the best chance of healing by stitching it intelligently.

If students are taught palpation and early examination it is wonderful how a fair knowledge of these methods of examination prevents many a case from becoming critical; the malposition or abnormal condition of the pelvis is found out early in labour, and the woman is not allowed to arrive

at the condition of exhaustion. In our method of teaching practical gynæcology, a patient is placed on the couch; the student whose turn it is must obtain from the patients their history for the purpose of keeping a record. In this he is checked by the teacher. Then he makes an examination by inspection, per vaginam and by palpation, using the speculum afterwards if necessary. In this way he acquires a facility of dealing with such cases, his diagnosis is corrected for him, and he becomes accustomed to the ordinary treatment, as he makes applications himself, corrects misplacements of the uterus and introduces pessaries, &c. As a matter of worldly wisdom an elementary knowledge of gynæcology becomes almost a necessity in private practice. I know many men who have been disgraced because they knew nothing about some trifling ailment in the gynæcological line, and so lost the confidence of the head of the house. On the contrary, any man who chances to relieve one of these minor ailments earns the undying gratitude of the mother, who will take very good care when other members of the family circle are ill that the doctor is called in who was clever in her case. I have had very many letters from past students saying how useful had been the practical instruction in gynæcology which they had received in Dublin.

The following is copy of portion of a letter from the Secretary of the Conjoint Board of Examiners of the Royal College of Physicians and Royal College of Surgeons, London, written to a student who wished to know if three months at the Coombe Hospital would count for his certificate of hospital attendance in diseases peculiar to women:—  
 “You will see that three months clinical study of diseases peculiar to women is required of all candidates for the final examination. Moreover, such study must be taken at a recognized general hospital, as we do not recognise special midwifery hospitals.—Yours very faithfully, Frederick G. Hallett, Secretary.”

On looking over the regulations of the conjoint bodies of the College of Physicians and College of Surgeons, London, I find that the special regulation states that a candidate must afford proof of having “attended at a recognised hospital or hospitals during nine months clinical lectures

on medicine, and during nine months clinical lectures on surgery, and of three months in the clinical study of diseases peculiar to women." Strange that with the splendid opportunities in Dublin for studying clinical gynæcology no effort has been made to have such midwifery hospitals as the Rotunda and the Coombe, with their large material for gynæcology, duly entered as a "recognised hospital." They make this stringent rule about gynæcology, although in practical midwifery they require only that a man should produce a certificate of "attendance on not less than twenty labours," which certificate may be signed "by one or more legally qualified practitioners"—mark the words *attendance on*—not even conduction, and that the certificate may be signed by any *one* qualified practitioner. What wonder then that the Dublin School of Midwifery takes a lead. We require in Dublin a six months' course at a lying-in hospital, and a certificate of attendance in the practice of this hospital of thirty cases, a certain number of which must be conductions. This refers to the Dublin University, the Royal University and the Conjoint Board of the Royal Colleges of Physicians and Surgeons, Ireland, the Royal University requiring in addition attendance on so many cases of diseases peculiar to women. Methinks the Colleges of London have strained at a gnat and have swallowed a camel! They refuse to recognise our midwifery hospitals, where we have advantages of teaching gynæcology not to be excelled in the three kingdoms, while they accept a certificate in midwifery from *any* qualified practitioner—a certificate bearing on its face no evidence of practical knowledge, as we all know how easily the word "attendance," may be construed. Again, in Edinburgh, I think I am right in stating, that for those entering before 1892 evidence was only required of having been in attendance on six cases, and that three of these cases must be in the same way certified as under the direct supervision of *any* qualified practitioner. True it is that since 1892 those who enter must produce evidence of three months' attendance on the indoor practice of a lying-in hospital, and personal attendance on six cases of labour, or alternatively, attendance on twenty cases of labour, at least five of which shall have been under the direct supervision of

a registered medical practitioner. I wonder if there have been any comparative statistics of the three countries brought forward at any time, comparing the rate of mortality of mothers and infants in childbirth. That it would be of interest I have no doubt. Do our English brethren consider the act of parturition in their country as a purely physiological act? Otherwise one can hardly explain such regulations, when we in Ireland think so differently. Could not our representatives on the General Medical Council draw attention to the fact, and endeavour to remove what certainly seems to me a blot in a scheme of education which is supposed to be drawn up with regard to the best interests of the community at large?

On looking at the *British Medical Journal* of August 28th, 1897, I find a list of those hospitals recognised as issuing certificates for medical clinical clerkship and for surgical dressership. I find the only Irish hospital named is "Sir Patrick Dun's," the only Scotch one is the Royal Infirmary, Dundee, and there are two in Tasmania, namely—Hobart Town and Launceston. In England there are twenty-seven scattered through the country (not including any London hospital). I may say that Scotland, Ireland, and Tasmania are the only "foreign countries" named, or had I better use the word "colonies" or "dependencies"—what an honour for Dun's Hospital to be bracketed with Tasmania! yet the latter has *two* hospitals recognised, Ireland only *one*.

Another of our troubles in this country is the abuse of hospitals and hospital dispensaries being made use of by people who could well afford to pay for advice elsewhere. I regret to say that improvidence is one of the characteristics of my countrymen, and that they are not ashamed to receive in charity what they could very well afford to pay for, were they more provident. To correct this as much as possible should be our united endeavour. I have tried to grapple with it and have succeeded to some extent. Patients in hospital, even though they may not be able to pay fifteen shillings or a pound a week, could almost all pay something, and I maintain that "*that something*" should be levied from them to go towards the support of the institution, otherwise you

are teaching them to be beggars. In large dispensaries, such as we have, patients often present themselves who can easily buy their own medicine ; for them, instead of having a white prescription form, I have one of a tinted colour, and when medicine is prescribed I send them with this prescription to a chemist with whom I have previously made an arrangement, and he supplies them with the medicine at a very large reduction. This saves the hospital the expense of supplying their medicine. In this I acted on the suggestion of Dr. Dickson. I have also had a locked money-box made, and this is taken round the patients in the dispensary each morning by the nurse in waiting, as I think that those who obtain the most advantage are those who should contribute something towards the support of our hospitals. I find this a comparatively successful method. I get some money that otherwise I would never get. Thinking of this same subject I have come to the conclusion that the proper way to obtain support would be by a house-to-house collection amongst those who benefit most by it. One penny a week from 80,000 people would amount to over £16,500 a year. How it could be done I do not know, but some means might possibly be devised. At present our charities are supported by a few, really a very few, charitable people. The same names appear on many lists, and as numerous as the sands of the sea are those who contribute nothing.

Another of the difficulties in the working of a general dispensary where none of your patients are of the male sex (except young children), and where very many of them are mothers with infants at the breast, is the question of infant feeding. All of us know how terrible is the rate of infant mortality, and amongst the causes that contribute to it perhaps none is greater than the ignorance of the mother with regard to suitable food for her child, suitable means of administering it, and suitable clothing and hygienic surroundings. The mistakes made by nursing mothers are almost incredible. I have known the child nursed at the breast for two years and ten months. I have known the infant of three or four months of age fed on bacon and cabbage. The usual reply to the query about food, as to what it consists of, is "Just whatever's goin', docther." To attempt

to explain to each one separately what she should feed her child on, or what she should not use, &c., &c., would be a Herculean task; moreover, if you *did* tell her she would forget in five minutes. To meet this, and knowing what a very important matter it is, I tried to introduce a little preventive medicine in the shape of a leaflet, which is handed to each mother, and she is told to keep it and consult it when in doubt about treating her children.

This pamphlet treats of the advantages of warmth, cleanliness, and fresh air; gives instructions as regards the proper duration of breast-feeding; instructions about bottle-feeding, and warnings against improper bottles and improper feeding; urges the importance of regular feeding; deals with the feeding of the child when it is over seven months old; the avoidance of stimulants, soothing medicines, teething powders, sleeping draughts, tea, beer, &c.; gives directions for making beef-tea, and advice for children over two years of age.

I am quite sure that were such a method more generally adopted it would be calculated to do a great deal of good, and not only diminish the rate of infant mortality, but also the amount of infant sickness induced by ignorance.

That good has been done in this way I doubt not—"forewarned is forearmed"—and it is my intention to have one of these leaflets handed to each primipara before she leaves the hospital. The expense is not great—much less than it would cost to supply the medicine—and I think most will agree with me that "prevention is *better* than cure." I must state here that I adopted this leaflet in its entirety from Dr. J. Knox Denham, who has found it of much benefit to his patients at the Ballsbridge Dispensary.

I have now come to a close, and I beg to thank you heartily for the very patient hearing you have given me. Perhaps the subjects I have brought before you may be thought too trivial for such an occasion as this. I have introduced them in the hope that they might interest you to some extent, as they have interested me, and in the expectation that each one may perhaps find for himself in all my chaff a pickle of wheat which (if I, an Irishman, may be permitted to say it) may in due time produce good fruit.



ART. III.—*A Case of Ruptured Tubal Pregnancy, with Intraperitoneal Hæmorrhage; Operation; Recovery.*\* By ALFRED J. SMITH, M.B.; Gynæcologist to St. Vincent's Hospital; Examiner in Midwifery, R.U.I.

I VENTURE to bring before this the Obstetrical Section of the Royal Academy of Medicine notes on a case of ruptured tubal pregnancy. I am indebted to Dr. O'Donnell, Pembroke-road, for the exhaustive notes he has given me of the previous history. It is as follows:—

“B. S., twenty-nine and a half years, married five years, always healthy, had three children. She was unwell only three times since marriage, and all confinements favourable. Her last child was born in the middle of March, 1896, and she nursed it for twelve months—till March the 22nd, 1897. She was not unwell since her last confinement, but thought she was pregnant since the middle of last January. She imagined she went on in the usual way, and by the middle of May she was so large that ‘everything’ was noticeable with her clothes on. About the 17th of May she suddenly got very severe pains in her abdomen, with vomiting. The pains were like her ordinary confinement pains; they lasted an hour, and, with a movement of her bowels, disappeared. She was all right for the next four or five days, until Friday, the 21st. About 7 o'clock in the evening the same kind of pains returned, with the vomiting; her bowels also moved very freely, and she got so weak that she had to be helped to bed. Her husband gave her some brandy, and she fell asleep until 3 o'clock a.m. on Saturday morning. She felt then much worse, with the pains shooting through her breasts and out through her shoulders. She remained in this condition until I saw her at 10 a.m. on the same day. I found her very bloodless, with small pulse, and perfectly prostrate. There was no external hæmorrhage, nor was there any swelling in the abdomen that could be determined by a very limited examination by palpation. Per vaginam there was nothing to be felt in the uterus. I considered that it was a case of ruptured tubal pregnancy, and called in Dr. Rowntree both for his advice and to take charge of the patient while I could procure the services of Dr. Alfred Smith, with a view to operation in case he considered it favourably.”

\* Read before the Obstetrical Section of the Royal Academy of Medicine in Ireland, on Friday, November 26, 1897.

I saw the case in consultation with Dr. O'Donnell on the night of May 22nd, 1897, and found the patient very collapsed, anæmic, and much distressed from loss of blood. I quite agreed with the diagnosis of ruptured tubal pregnancy, and urged the advisableness of immediate operation. It was out of the question to undertake the operation at Kingstown. I telephoned to St. Vincent's Hospital to have everything ready for abdominal section. I administered to the patient morphia ( $\frac{1}{4}$  gr.) hypodermically, got her transferred (wrapt up in blankets) to a cab, and sent her on to the hospital. She arrived there very little the worse of her journey. She was placed on a Trendelenburg table, and, with the assistance of Mr. M'Ardle, Dr. O'Donnell being present, I opened the abdomen, turned out the large blood clots, ligatured and removed the ruptured tube. While removing the clots I secured a large tuft of chorionic villi and also a small foetus enveloped in its amniotic sac.

I then poured into the peritoneal cavity some saline solution, and closed the abdomen, leaving a considerable quantity of fluid blood behind. The after-history of the case is uneventful. She rapidly regained strength, and left the hospital four weeks after the operation.

Her history after she left the hospital is very remarkable and worthy of notice. Dr. O'Donnell reports:—

“The patient's changes came on one week after operation. She was unwell regularly up to the 10th of August, and she is now pregnant for the past three months, feeling strong and as well as she ‘used to.’”

The specimen [exhibited] was a Fallopian tube of the left side, showing a rent through its inferior border at the junction of the ampulla with the isthmus. There is also to be seen a large circular opening, sufficient to admit the tip of the index finger, in the posterior layer of the broad ligament, quite close to the rupture in the tube and leading to it.

The tuft of chorionic villi is characteristic, and presents no unusual features. The foetus is enveloped in its amniotic sac; it is about half an inch long, and is approximately the growth of between eight and ten weeks' gestation.

The points of interest seem to me to be:—

- (1.) The occurrence of a tubal pregnancy in a patient so prolific—she had three children in five years.
- (2.) The history of a secondary rupture; pain occurred first on the 17th of May, which was followed by a period of quiescence, and a return of the pain on May 22nd is confirmed by the pathological specimen, which shows, I think, evidence of a primary rupture between the layers of the broad ligament and a secondary one into the peritoneal cavity.
- (3.) The absence of any hæmorrhage per vaginam.
- (4.) The fact that the patient is again pregnant so soon after such a serious operation.

I feel bound to state that I believe this patient owes her life to the early recognition of the ruptured tube, and I take this opportunity of congratulating Drs. O'Donnell and Rowntree on their brilliant diagnosis.

ART. IV.—*Note on a Case of Pityriasis Rubra.*\* By JAMES B. COLEMAN, M.D. Royal Univ. Ireland; Physician to the Richmond, Whitworth, and Hardwicke Hospitals; Physician to the Children's Hospital, Dublin; Consulting Physician to the National Hospital for Consumption, &c.

IN bringing before the Academy a case of the rare skin disease pityriasis rubra, a few remarks on the use of the term may not be out of place. Etymologically the name pityriasis rubra is derived from *πίτυρον* (bran) and *ruber* (red), and from the time of Bateman it has been applied to various chronic affections of the skin characterised by scales and redness. In 1854 the term was used in a more restricted sense by Devergie, who applied the name *Pityriasis rubra aigue* to the disease, while Hebra, writing in 1860, called it pityriasis rubra. Hebra's description is as follows:—"In pityriasis rubra there is nothing more than an intense redness diffused over a large part of the skin, or even universal, disappearing beneath the pressure of the finger (when it gives place to a yellowish coloration), and accompanied by

\* Read before the Medical Section of the Royal Academy of Medicine in Ireland, on Friday, 19th November, 1897. [For discussion on this paper see page 80.]

the presence of fine, white, loosely-adherent scales, which result from the constant shedding of the most superficial layer of the cuticle." He insisted on the absence of infiltration, moisture, or of severe itching or excoriations, which were present in psoriasis, eczema, lichen, &c.

Kaposi writes:—"By pityriasis rubra we mean a peculiar disease, first described by Hebra, which is of extremely rare occurrence, and is characterised besides its chronic course by the fact that it presents no other form of eruption (neither nodules, nor vesicles, nor pustules) but that from the start, and during its entire course, there is nothing but redness and desquamation of the skin."

Crocker defines pityriasis rubra as "An inflammatory disease involving the whole surface of the body, characterised by deep redness with abundant flaky desquamation," and he states that it may be primary or follow some other form of dermatitis. He gives "dermatitis exfoliativa" as a synonym. Confusion would be avoided if the name pityriasis rubra were confined to the disease described by Hebra, and if the term "general exfoliative dermatitis" were reserved for cases secondary to other skin diseases—such as psoriasis, eczema, &c. The patient whom I exhibit will be found to be an example of Hebra's type of pityriasis rubra. His *clinical history* is as follows:—

Edward R., aged twenty, a clerk by occupation, was admitted to the Whitworth Hospital, on November 4th, 1897, suffering from general redness and scaling of his skin, with some itchiness. He has had the affection for the last six months. It appeared suddenly last May, in the shape of redness on the backs of both his hands and wrists, and, spreading from those regions, the eruption covered the whole body within a week. From the start the skin was bright red, and there was free desquamation of large, thin white flakes. The eruption was preceded by, or attended with, no general symptoms, but there was moderate itching. He had previously enjoyed excellent health, and never had any skin affection. He never had syphilis. He was a total abstainer till last November, since which time he drank to excess, more especially during the month preceding the appearance of the disease. He was constantly exposed to cold, and the night before the onset of the eruption he was out all night and got a severe wetting. Alcohol and chill, therefore, may have had some ætiological influence in exciting the disease.

His family is free from any gouty, rheumatic, or phthisical taint, with the exception of an uncle who died of phthisis. He states that an aunt had eczema.

On admission to hospital he was fairly well nourished, though of rather slight build, and he enjoyed good health except for the condition of his skin. He sometimes complains of feeling chill when he goes out of doors, and he is troubled at night by moderate itching. He eats and sleeps well; his bowels are usually confined; urine normal. His lungs and heart are healthy; temperature normal. The inguinal and axillary glands are all enlarged, but only to a slight degree.

Examination of the blood shows a normal condition as to sp. gr., hæmoglobin and red corpuscles. He has marked leucocytosis, the white cells being increased to 37,000 per cubic mm. Further, the eosinophile leucocytes are relatively increased, constituting 10 per cent. of all the white cells. A differential count of 1,000 leucocytes gives the following result:—

Lymphocytes	...	...	...	20 per cent.
Large mononuclear and transitional forms	...	4	„	
Polymorphonuclear neutrophiles	...	66	„	
Eosinophiles	...	...	10	„

The patient, therefore, has *eosinophilia*, a condition found by Neusser in many skin affections.

The skin all over his body is of a dull red colour, and covered with thin, papery scales. It feels hot, rough, and dry; he never sweats. The redness fades on pressure, leaving a yellowish hue. The scales are thin, whitish, easily separated from the subjacent skin, which is red, but neither moist nor infiltrated. The scales vary in size from a fine branny desquamation on the face and hands, to large flakes as big as a sixpenny piece on the back and on the extensor surfaces of the limbs and dorsal surface of the feet. During the earlier months of the disease the scales were much larger; for the last few weeks they have diminished in size. Every morning about a pint of scales and powdery detritus is found in his bed. The nails of both big toes and of the little finger of his right hand are thickened and nearly separated from their bed by an accumulation of epithelium beneath. The other nails are thin, and longer than the fingers and toes—the thinning being specially conspicuous in the toe-nails. The scalp is covered with whitish-yellow masses of scales, and the hair is falling out. The surface of the palms is a little reddened, and covered with fine, powdery desquamation, and the epidermis appears thin (as if newly formed) and traversed by superficial cracks. The skin of his soles is

thicker and desquamating in white flakes. He states that the epidermis peeled freely from his palms and soles at an early stage. When the skin is relaxed, especially at the bends of his elbows, the sides of his neck and trunk, &c., the red and scale-covered surface presents the appearance of crepe, being traversed longitudinally and transversely by fine ridges and furrows; but if the skin is made tense in the same positions, the ridges and furrows are obliterated, and fine, linear red streaks become apparent. The mucous membranes are not affected, and the tongue is normal.

The above description fairly represents his condition on admission to hospital a fortnight ago; since then he has improved considerably; the amount of the desquamation and the size of the scales have diminished, and the itching is less. The scales are now most evident on the extensor surfaces of his arms, on his back, and on his legs.

The *diagnosis* of the case depends on the positive characters of—the rapid onset of universal redness of the skin, associated with loosely-adherent, thin, papery scales, and on *the absence* of thickening, moisture, or of any primary lesion. The case differs from lichen ruber in the absence of papules at any stage, and in the absence of thickening; from pemphigus foliaceus, in the absence of laminated crusts, and of flaccid bullæ, beneath which the corium would be moist and raw; from general eczema, in the absence of exudation and of severe itching, of infiltration, vesicles, pustules, and crusts; from diffuse psoriasis, by the absence of silvery scales adherent into crusts, and the absence of red points when the scales are removed; and from *all* those affections it differs in its absolute universality.

The *prognosis* of the case, both in reference to its probable duration and likelihood of cure, and as regards its danger to life, must be considered serious, but by no means as hopeless as Hebra's and Kaposi's experience would indicate. Those observers record a fatal termination in almost all the cases which came under their notice. On the other hand, Crocker considers 50 per cent. far too high a figure for the mortality, and Pye-Smith refers to forty cases from different sources, with fifteen recoveries and only eight deaths. It is probable that such discrepancy in the proportion of fatal cases in the practice of different dermatologists is due to the fact that

general exfoliative dermatitis secondary to psoriasis, eczema or other skin diseases is not nearly as intractable or as fatal as Hebra's type of pityriasis rubra, whereas some authors classify all cases under the latter category. Most fatal cases appear to occur in children or in elderly patients.

The *rarity* of the disease is indicated by the fact that Hebra met with fifteen cases, and Kaposi only six, whilst Crocker saw only fourteen instances of the affection amongst a total of 10,000 skin cases in his hospital out-patient department.

The *course* is generally very chronic, and the usual cause of death is marasmus or some intercurrent complaint. Cases which apparently recover are very liable to recur.

The *cause* of the disease is unknown.

Regarding the *pathological anatomy* in recent cases there is a moderate amount of cellular infiltration in the cutis and papillary layer. No special changes occur in the epidermis apart from those associated with desquamation. In the later stages there is much atrophy of the skin, the rete Malpighii is thinned, the papillæ disappear, and the skin appendages are obliterated. Where the atrophied skin is tense fissures may occur.

The *treatment* of pityriasis rubra, as may be inferred from the chronic course of the disease and high mortality, is not satisfactory. Such general measures as prolonged rest in bed, avoidance of cold, repeated employment of tepid baths, milk and easily assimilable diet, are indicated, together with the local use of oleaginous applications and emollient ointments. The internal administration of arsenic may be tried in the later stages, though it frequently fails; bark and mineral acids, iron and cod-liver oil have benefited some cases. Perhaps the employment of thyroid extract might be of use. I should add that my patient has been treated with arsenic, ointments and baths for the last few months without any apparent improvement. Since he came under my care a fortnight ago, I have adopted no more active treatment than keeping him in bed and giving him an aperient mixture containing sulphate of magnesia. Whatever the result may be attributed to his condition has certainly improved since his admission to hospital, but it remains to be seen if the improvement will be permanent.



ART. V.—*On Suppurative Middle-ear Disease and its relation to the Exanthemata.\** By ROBERT H. WOODS, M.B. Dub., F.R.C.S.; Surgeon for Diseases of the Throat, Nose and Ear to the Richmond Hospital, Dublin.

No one will dispute the statement that the study of suppurative middle-ear disease is of the first importance to a healer of the sick, not merely because it may impair or destroy the hearing or menace the life of the individual, but from the fact that its frequency is so great that it falls to the lot of everyone in ordinary practice to meet with numbers of cases annually.

One would think this a sufficient reason in itself for giving the subject a prominent place in the medical curriculum, instead of relegating it to the insignificance in which it confessedly lies.

This is not the place, nor is it my function, to impeach or defend the present system of medical education and examination, but I may be allowed to say that the cause of the anomaly is that we are in a transition stage. Surgery in general has within the last few years experienced in anæsthetics and antiseptics the greatest revolution it has ever seen, or perhaps will ever see—a revolution whose magnitude we do not and cannot yet appreciate. Otology has only within the last fifteen or twenty years freed itself from the reproach that ear diseases were of two kinds—those that got well with syringing and those that were incurable.

Knowledge is always ahead of improvement, and, therefore, the fact is not surprising that in spite of its progress the subject is still trammelled by tradition. I am convinced that when the relative importance of the various branches of medicine and surgery come to be reconsidered, in view of the advance and development of each, otology will be estimated at a much higher and juster value than at present. The deplorable neglect and indifference with which people so frequently regard otorrhœa, even in those who are near and dear to them, is, I believe, partly that proverbial contempt bred by familiarity, and partly a relic of the days when, from

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want of knowing how to treat it, no effort was made by doctors to check its progress.

It is the rule, rather than the exception, at least among the poor, to hear a mother excuse the neglect of her child's incurable ear by saying "she thought it would grow out of it," or, "she was told it would be dangerous to stop the discharge." I regret to say the doctor is often quoted as having originated or confirmed this view. That qualified men are to be found capable of committing themselves to statements such as these is a satire on examinations. Ignorance such as this can be combated only by the education of the profession and the enlightenment of the public.

The special branch of disease of the middle-ear of which I now wish to speak is acute suppurative inflammation, its nature and treatment.

Let us first consider what happens when a patient for the first time gets a discharge from the middle-ear. After exposure to cold, or during the progress of a sore throat, or in whatever way it happens, he first notices a slight but gradually increasing throbbing pain, and with it a sense of fulness deep seated in the ear. The hearing power on that side becomes impaired, subjective noises are heard, and the severity of the symptoms increases until he is found to have a quickened pulse, a slightly furred tongue, and a temperature a degree or two above normal. The membrana tympani, if observed, will be seen to be dusky red in colour, convex outwards from pressure of fluid from within, the light reflex gone, and the handle of the malleus indistinct. These symptoms continue until, after a shorter or longer time, they are relieved by the bursting of the membrane, and the appearance of a bloody, serous fluid in the external auditory meatus. In a day or two this thin, watery discharge gives place to a thick, yellow, mucopurulent one, and so the process becomes established.

There is every reason to believe that in the vast majority of cases the inflammatory process makes its way by direct extension from the throat along the mucous membrane of the Eustachian tube, the narrowest part of which becomes blocked by the swelling. The fluid evoked by the irritation, deprived of any natural exit, is pent up in the drum until

its pressure becomes sufficiently great to determine the rupture of the softened membrana tympani and initiate the discharge.

I think I am correct in saying that this is regarded by all writers on the subject as a purulent process pure and simple, that the fluid is of a purulent nature *ab initio*, and that the right treatment is to perform paracentesis, and relieve the patient by giving artificial exit to the offending liquid, and this was my own belief and practice for some years.

My former teacher, Professor Gruber, describes the quality of the initial discharge as serous-bloody-purulent (*seröös-blutigeiterig*). My observations within the last few years have led me to the belief that purulent otitis before rupture of the membrane and establishment of the discharge is very rarely met with, and, therefore, that paracentesis as a routine treatment in these cases is unjustifiable; and one of the objects of this paper is to support this contention as well as to try and throw some light on the earlier, and, therefore, seldomer observed, stages of the disease.

Some years ago, when the subject first engaged my attention, I followed the classical treatment, and found, in common, I suppose, with other people, that in some few cases the ear discharged a small quantity of this bloody serous fluid for a day or two, and then dried up. In others the serous discharge gave place, after two or three days, to the yellow mucopurulent one, which persisted for weeks before it could be made to stop, while in a few cases a chronic discharge was set up which lasted indefinitely. Among these one or two occurred which shook my belief in paracentesis. In one case a very severe otitis media, conforming in every respect to type, was caused by a jump into water from a height. The concussion was severe, and was followed directly by otitis. After the process had been established some seven days the membrane was incised, and the usual train of events followed. First sero-sanguineous discharge, and in a couple of days pus, which, under antiseptic treatment and drainage, ceased in about three weeks, the hearing returning to normal in a couple of months. Here, unlike inflammations extending from the throat, there could have been no micro-organisms introduced into the

tympanum, and one might reasonably have expected that the local inflammation of a moderate mechanical stimulus would terminate without suppuration.

The question then presented itself—Why did this case suppurate? There were two possibilities—either there might have been, before the accident, lying quiescent in the drum, pyogenic organisms which only needed the opportunity afforded them by the injury to infect the mucous membrane; or the drum had been aseptic to start with, and the serous discharge had become accidentally contaminated from without. This latter theory seemed by far the more likely, and the suspicion then arose—could it be possible that some or all of the other cases met with were aseptic ones, which, if let alone, might never have discharged at all, where suppuration supervened accidentally, either through some fault in the antisepsis at the time of puncture, or subsequently by infection of the serous discharge through inadvertence on the part of the patient. I do not now say I believe in the truth of this theory put in so many words, but at the time it seemed plausible, and it led me to the opinion, which I still hold, that the serous fluid in the drum ought not to be regarded or treated as purulent, but looked upon as a simple, or perhaps conservative, exudation provoked by a severe irritation. There then seemed a possibility that sedative treatment might allay the irritation, and, by causing the fluid to become absorbed, obviate rupture of the membrane and suppuration.

In order to test the truth of this supposition I treated some cases as follows:—I first ordered a saline purge and, with the object of relieving the pain, applied one of the ovoids recommended by Gruber for furuncle of the external meatus. These are small torpedo-shaped masses of jelly, weighing about four grains, having for their basis a mixture of gelatine, glycerine and water in such proportions that they remain gelatinous at ordinary temperatures for an indefinite time, while melting at the body temperature. The proportion of water is so balanced that they tend neither to dry nor deliquesce. Before they are cast a quantity of Ext. opii. liq. is added to and dissolved in the melted gelato-glycerine, so that each ovoid when moulded contains one-sixth of a

grain of the extract. One of these was put in the affected ear, and the meatus plugged with a pledget of cotton wool. The patient was directed to lie on the opposite side for some hours, or as long as he conveniently could. The ovoid melted and bathed the tympanic membrane, giving the drug an opportunity of exercising its influence. By getting the patient to sleep on the opposite side the treatment could be continued all night, as well as a great part of the day.

This treatment was followed by the effect hoped for. The pain was relieved, the throbbing and noise ceased, and after some days the process subsided, the fluid becoming gradually absorbed and the hearing restored. In this way I treated acute otitis of every severity and from a variety of causes, including acute cold, traumatism, and plugging of the posterior nares for hæmorrhage. One case due to the last-named cause deserves special mention. It was a case of mucous polypi associated with purulent rhinitis and empyema of the ethmoidal sinuses, in which hæmorrhage necessitated plugging. While the plugs were being fixed the patient felt fluid being forced into his ear, which shortly afterwards inflamed severely. Even in this case, as in all others where the patient was not the subject of an exanthem, and presented himself at the beginning of the attack, the method did not fail.

This line of treatment had the following advantages:—When it succeeded the patient was delivered from the dangers attendant on suppuration, and the pain was relieved as completely as by incision; again, when it failed, and the membrane burst as it sometimes though rarely did when the patient delayed presenting himself until late in the attack, he was no worse off than he would have been with paracentesis, for a ruptured drum can be made to heal as perfectly as an incised one, and the hearing to recover as completely.

Although it is true that the sero-sanguineous fluid in question will avail itself of the opportunity to degenerate into pus, nevertheless the fact that it can by suitable treatment be made to resolve itself is to me proof that it is not purulent in the ordinary acceptation of the term.

But it must not be taken as my contention that it is of a strictly aseptic nature, for I readily admit that it is generally

evoked by a bacterial irritation by extension of an inflammatory process along the Eustachian tube from the throat. The question then arises—What is the precise part played by bacteria in this disease?

If the fluid, when it first flows, be examined microscopically, there will be found a few leucocytes, some epidermal and epithelial *débris*, and a few—but very few—bacteria. If the discharge be examined a few hours later the organisms which were at first counted by units will now be numbered by thousands. At the end of a day or two the discharge will appear to consist of nothing but bacteria, and this state continues until the pus proper makes its appearance. This series of events always take place, no matter whether the membrane ruptures or is incised; and, if the latter, whether done early or late, in the course of an attack, which may last as long as a fortnight. In other words, as long as the membrane remains intact the condition of the fluid remains unchanged or without visible change, and the bacteria in the drum are prevented from, or, at least, enormously retarded in developing. But when once the fluid gains access to the meatus, the causes which prevented the multiplication of the bacteria cease to exist. This shows clearly that the date of the formation of pus is determined only by the time of incision or bursting of the membrane, and is therefore independent of the length of time the otitis has been established, which could not be the case unless the fluid retarded the growth of the bacteria.

How comes it, then, that bacteria may lie indefinitely in a nutritive fluid, at the most favourable temperature, and yet show so little disposition to develop? Though this question is more readily asked than answered, it is easy to see that it is only a particular case of the general rule, that the body when invaded by bacteria does not allow itself to be consumed by them like gelatine in a test tube, but exercises, in one way or another, a restraining or inhibitory influence on the vitality of the microbe with the object of its destruction, an object in which it often succeeds and sometimes fails in attaining. This explanation is, after all, at best little more than a paraphrase of the question, but we are not so much concerned here with the explanation as with the fact.

We are compelled, therefore, to regard the fluid as it lies behind the intact membrane as part and parcel of the living body, as in itself endowed with life—as, in a word, like the blood, a fluid tissue having for its special function the termination of bacterial invasion by the destruction of the invaders. The fluid in the drum, therefore, is an evidence of the fight going on between the man and the microbe. The victory belongs to the man when the inflammation subsides without discharge, and to the microbe when the discharge is established, and though possibly the tide of battle may be turned, and the issue of the struggle decided in favour of the microbe before rupture actually takes place, the interval, if any, must for every reason be a short one—too short, even if determinable, to allow of surgical interference.

The fact is thus explained that pus is not of necessity formed in an ear when attacked by micro-organisms whatever the exciting cause of the attack may be, and justifies the attempt to prevent that issue by coming to nature's aid and assisting her to ward off, rather than by untimely interference to precipitate, what must be regarded as a calamity.

I was desirous of seeing how far the otitis of the eruptive fevers conformed to the type of ordinary acute otitis, as there was no *à priori* reason why they should not be identical. I thought it possible that timely treatment might mitigate the ravages it notoriously makes, especially among the children of the poorer classes. With this object, in October 1896, I began to investigate the cases admitted into the Hardwicke (Fever) Hospital. For their kind permission to observe the patients under their charge, and for facilitating the work in every way, I am indebted to my colleagues, Drs. O'Carroll and Coleman, and my late lamented colleague, Dr. G. P. Nugent.

It was obvious that unless one knew what happened when cases were left alone it would be impossible to estimate the effect of treatment, and it was quite clear too that there would be little use taking one or two cases which might or might not be typical and generalising from them. It was therefore decided to take a series of at least one hundred cases, and carefully observe how they behaved while leaving them entirely untreated; then by taking a similar number of other cases and treating them by different methods, that

method adopted in the treatment of the ordinary acute case might be improved upon, and finally, by applying this improved method to a third series, its approximate value might be learned by comparing its results with those of the first series, and this was the plan followed.

The wards were visited daily, including Sundays, from October 5th, 1896, to March 5th, 1897. Daily observations were taken to the number of about 6,000, and a daily record made of the condition of each ear in each case. Two interruptions only occurred—once for two days at Christmas, and once for two days from indisposition, the effect of an acute cold.

In the first or observation series, the progress of the case, so far as the ears were concerned, was not interfered with unless discharge supervened.

In the second series, experiments were made with ovoids impregnated with various drugs in order to find out whether, and if so to what extent, the progress of otitis was influenced by their application; and in the third series the treatment considered best in the second was systematically applied to every ear which inflamed.

The method of observation was as follows:—A 12-volt electric lamp, carried in a handle identical in pattern with that used in Caspar's urethroscope, and fed by a small accumulator, was carried about from patient to patient. This apparatus by means of a right-angled prism with a reflecting surface sent a beam of light out at right angles to its shaft, and this was used to illuminate a silver speculum of the Gruber type. By thus dispensing with daylight and reflectors, it was possible to examine the patients' ears as they lay in bed, by simply getting them to turn over on the side first examined. This was a most important advantage, for it enabled one to examine patients, even when very sick, without the least disturbance, which would have been quite impossible by reflected light. The method had also the secondary but still important advantage of greatly economising time.

In purulent cases the specula after having been used were sterilised by boiling so as to obviate the risk of grafting the bacteria of one case on to another.

The observations lasted on an average over a fortnight,



sometimes more and sometimes less, according to the nature and progress of the case. The name, age, sex, and disease of each patient was entered in a book, and a daily note made of the condition of each ear and the treatment, if any, adopted.

In each series the patients were taken without any selection in the order of their admission to hospital. There was no perceptible change in the virulence of the epidemic during the time covered by the observations. The diseases from which they suffered were almost exclusively measles and scarlatina, but no distinction was made, as far as observation or treatment was concerned, between one disease and the other.

In the first, or observation class, it was seen that the severity of the inflammation in different cases was most variable, both as to the degree reached and the rapidity of its onset.

The time, too, at which the inflammation appeared was most variable, and did not seem to bear any constant relation to any stage of the disease. As a general rule the more severe the attack, and the worst nourished and dirtier the patient on admission, the more severe and rapid was the inflammation, though well-marked exceptions to this rule were not infrequent. The existence of enlarged tonsils and post-nasal adenoids seemed, as far as measles was concerned, to have more to say to the probability of ear complication than the severity of the disease. In scarlatina, however, not only the tendency to otitis, but the severity of the attack, were largely dominated by the presence of post-nasal growths and enlarged tonsils. The severity varied from a few hæmorrhagic spots on the membrane, or a scarcely recognisable erythema in the neighbourhood of the handle of the malleus, without any other pathological change, to the most intense livid injection, with bulging of the membrane, loss of light reflex, &c. The rapidity varied from cases in which the formation and discharge of the fluid occurred within twenty-four hours, the membrana tympani having been to all appearance normal the day before, to those in which a scarcely perceptible daily increase in the physical signs took ten or twelve days to culminate in rupture; while in others, and



these were to me the most interesting, the process, even though severe, subsided without any discharge. In this untreated class I have seen severe inflammation, with bulging of the membrane and rupture apparently imminent, last for as many as eight days, and then subside as it began. And this was by no means exceptional, for of the total number of ears which inflamed in this class, over forty per cent. terminated in this way without, as I have already said, any treatment whatever.

The reading of this was easy. Cases where the rupture of the membrane took place within a few hours were those in which, whether on account of the patient's inability to resist the bacterial invasion, the expression of his ill-health, or from special virulence of the microbe, the fight resulted in an easy victory for the invader. Again, where the inflammation lasted a week or ten days, the contending forces were nearly equal, and the issue was determined either by accidental circumstances or the gradual gaining of ground by one or other side. While cases where a short attack was accompanied by slight inflammation, were those where the vital forces of the body were superior to those of the bacteria.

These cases of every kind differed from the ordinary acute otitis in one important respect, and in one only—viz., absence of pain. No matter how severe the objective signs it was the very rarest thing to hear either child or adult complain of pain, or acknowledge its existence.

Here, then, was a very important fact:—Of the total number of middle ears which inflamed, over 40 per cent. recovered after a variable time, absolutely and completely without rupture of the membrane. Obviously there must have been a considerable number on the border line. Some of those which recovered needed only that the attack should have lasted a little longer, or have been a little more severe, or that the power of resistance of the patient should have been a little less, in order that discharge should have been established, and conversely some of those patients in whom discharge appeared might, with a trifling alteration in their condition, a straw perhaps in the balance, have been saved from a purulent ear and its risks.

It was interesting to see whether this latter effect could be compassed. There was but one way of deciding the question, and that was by statistics, for it would have been quite useless to apply any treatment to a single ear, or any small number of ears, and generalise from the results observed; because a case that recovered might have been either lauded as a cure or stigmatised as a recovery in spite of the treatment, according as the critic was favourable or hostile. The more cases, therefore, the more reliable were the results likely to be, and for this reason I am sorry the number is not greater; but the demands on my time from other sources were too great to permit my going into the subject more exhaustively then. I may, perhaps, hope however, that someone else will be sufficiently interested in the results to supplement my feeble efforts, and give the subject some of the attention it undoubtedly deserves.

The drugs which appeared the most likely to do good were three—viz., opium, belladonna, and cocain. After some trial in the second class I concluded that each of these had a sedative effect of its own, and in the end adopted an ovoid containing:—

Ext. opii. liq., gr.  $\frac{1}{4}$ .

Cocaïn hydrochloratis.

Atropin. sulph. āā gr.  $\frac{1}{4}$ .

and this was exclusively used in the third class of cases. Before adopting this, I inquired of the Professor of Materia Medica in this University, Dr. Walter Smith, and Professor Whitla, of Belfast, about the possibility of antagonism between the opium and atropin, but they agreed in saying that the fact of their having different actions on the pupil was no reason why their local sedative effect, when combined, should not be the sum of the sedative effects of each.

The ovoids were prepared by me as follows:—Gelato-glycerine was the basis used. It was so made that while remaining gelatinous at ordinary temperatures it melted as the temperature of the body was approached—i.e., between 90° and 95° F. The proportion of glycerine to water was 3 to 1. The gelato-glycerine was, therefore, not liable either to dry or deliquesce, as might happen if too much or too little water were used. Aseptic precautions were taken

in their manufacture, not because there was ever the least tendency to decomposition, the large proportion of glycerine preventing that, but in order to avoid the possibility of infection through using unsterile material. I have lately thought it advisable to add 2 per cent. of creolin as a safeguard against accidental contamination, as well as to try and render the meatus aseptic, so that if discharge supervened no additional organisms might be grafted on from epidermis in that locality.

When an ear was observed to begin to inflame, one of these ovoids was put in and the patient directed to lie for two or three hours on the opposite side, so as to allow the pellet when melted to lie on the tympanum. In a severe case two ovoids were put in, one in the morning and the other at night.

In this way the inflamed ears of the third series were treated.

Let us now compare the results of the three classes.

In the first, or observation, class the number of cases was 121 (measles 65, scarlatina 56), or 242 ears. Out of these 242 cases there was distinct and undoubted inflammation in 84, and of these 84 inflamed ears 49 discharged, while the remaining 35 recovered without discharge, simply having been let alone.

Discharge, therefore, followed in this untreated class in 58 per cent. of those ears which inflamed, being 20 per cent. of the total number of the ears observed.

The second, or experimental, class included 97 patients (measles 10, scarlatina 87), or 194 ears. Of these 194, 47 inflamed, and in 18 cases inflammation was followed by discharge. Pus, therefore, followed in 38 per cent. of the inflamed ears, being 9 per cent. of the total number observed.

In the third series 101 patients (measles 57, scarlatina 44) were included, being 200 ears. Of these 200, 49 inflamed, the inflammation, notwithstanding the treatment, being followed by discharge in 16 ears, being 32 per cent. of the inflamed ears and 8 per cent of the total number observed.

It must be stated that these 16 purulent ears included five to which, owing to accidental circumstances, no treatment whatever had been applied, and if, as might be fairly

done, some of those were eliminated, the total would be still further reduced ; but even including them, the percentage is sufficiently below that of the observation class to prove that the treatment was of service.

Taking the cases all round, surprise may, perhaps, be felt at the large number of ears which discharged, but it must first be remembered that the epidemic was a severe one, and, secondly, that the patients were recruited from one of the poorest districts in Dublin, many of them from the work-houses, the children being, with few exceptions, badly nourished and not well cared for. But these were factors which influenced each class alike. Many of these children were badly trained and difficult to manage, and this often made it hard to get them to lie for a sufficient time on one side to give the treatment a fair chance.

Though in the large majority of cases there was no room for doubt as to whether an ear was inflamed, yet instances occurred where one could not definitely say whether the term inflammation could be applied or not. In such cases a note of interrogation, or some other doubtful sign, was recorded, and unless the following day or two showed a distinct increase, the case was not regarded or recorded as inflammatory. The gradations from the normal ear to one on the point of rupture were imperceptible, and proved conclusively to my mind that no hard and fast line can, from the symptoms, be drawn between myringitis, non-suppurative otitis, and suppurative otitis ; the difference between these latter two being, as my contention is, purely a question of rupture of the membrane. Myringitis and otitis, therefore, though useful clinical terms, ought not to be interpreted as meaning anything pathologically different in kind, but merely a difference of degree.

When the otitis ran a slow course the formation of the perforation when it occurred could be easily seen. I have observed it behind and below the tip of the handle of the malleus oftener than elsewhere. When the intra-tympanic pressure becomes too great a spot is formed by the membrane becoming paler than the rest, and apparently by an anæmic necrosis the patch softens, and finally gives way.

There is a reason why this point should be more frequently

chosen than any other as the seat of rupture. When a membrane becomes stretched by pressure of a fluid its ability to resist the pressure depends not only on its intrinsic strength, but also on the curve it assumes under pressure, the shorter its radius, or, as the case may be, radii, of curvature the greater the pressure required to burst it. Thus, if we have two hollow spheres made of the same thickness and of the same material, but with unequal diameters, and if they be subjected to the same increasing pressure from within, it will be found that the larger sphere will be the first to rupture. And similarly, if a uniform membrane have a surface such that the curvatures at various points are various, it will be found that pressure will burst it where the radii of curvature are greatest. In a distended tympanum this point is situated behind and a little below the handle of the malleus. I shall not go more fully into this point, but refer any one interested to a paper read by me before the Royal Academy of Medicine in Ireland, and which will be found in its Transactions, Vol. X., and in the Journal of Anatomy and Physiology, Vol. XXVI.

It follows, therefore, that when the drum bursts as a consequence of mere pressure, this will always be the point selected, and it follows also, if the rupture occurs at any other point, that there must have been some other weakening factor at work in that locality. That such factors exist is obvious from the consideration that even when this weak point gives way, the damage does not always stop there, but in some instances involves other parts of the membrane. Very large perforations and destruction of the membrane are instances of this, but in my experience, as I shall mention later on, they never occur in a protracted case.

Microscopic specimens were taken from many of the cases at intervals after the discharge first appeared and some important facts observed. The matter obtained on the first day of discharge stained with difficulty and showed little except some epidermal or epithelial *débris*, with here and there a micro-organism. In some none were found. In the specimens taken the second day were usually found countless thousands of bacteria that with difficulty could be discovered twenty-four hours before. On the third day, or in some

instances not until the fourth, pus cells were to be seen in abundance. The microbe observed in most instances was a diplococcus. The date of the appearance of the pus cells in quantity was always approximately the same, and seemed, as in acute otitis, to have no relation to the length of time the process lasted before rupture. In many cases where the meatus was kept free from contamination by other bacteria, this diplococcus was alone seen, being in fact in pure culture.

A comparison made between any of these and pus from a chronic suppurative case which had originated during an exanthem established the contrast, that whereas in the acute condition there are rarely bacteria of more than one kind present in quantity, in the chronic there are to be seen several—notably bacilli, spirilla, staphylococci, and streptococci, none of which are proper to the acute condition. This at once raises the suspicion that one or more of these latter forms gained entrance to the tympanum through want of proper precautions during the acute attack, and having established themselves there kept up the flow of pus indefinitely, the bacterium which started the otitis having worn itself out. It requires but little consideration to show the likelihood of this, for the discharge acts as an excellent culture ground, providing moisture and pabulum at the ideal temperature for growth and reproduction, and furnishes a track from the point of infection back to the tympanum, along which the microbes can extend at their leisure.

From what I have observed I have no doubt that this is what happens, and that it requires, in an ordinary case, little more than elementary cleanliness in order, by preventing this epi-infection, to insure that the inflammation may subside and the membrane heal in a few weeks, leaving the patient little, if any, the worse either in health or hearing.

This is a point of the very first importance, for, to say nothing of the damage to the hearing power which invariably takes place, it is precisely in these chronic cases that intracranial complications arise, and the number of deaths due to this cause is very much greater than would appear by the Registrar-General's returns.

From the foregoing it will be seen how important it is to be careful in cleansing instruments that are brought into

touch with the ear. A speculum or probe once used in a chronic case may, as the bee carries pollen, be the means of grafting on to an acute case the microbe destined to convert it into a chronic one. The use of a speculum unless recently submitted to a reliable cleansing process, is as great a surgical crime as the use of a dirty knife. Sterilisation by boiling is so simple, so effectual, and so cheap, that it should be used by everyone who examines an ear, and its general adoption would incidentally get rid of that abomination, the vulcanite speculum.

The plan of treatment adopted, with a view to healing the discharge, was the following:—On admission of the patient to hospital the external meatus was cleared of cerumen and epidermis by syringing with 1 in 60 carbolic lotion, for the double purpose of observation and cleansing the epidermis of any microbes that might be lying in its superficial layers.

When the discharge showed itself, the ear was again syringed and the syringing repeated as often as the discharge became visible. After each syringing the ear was carefully dried with cotton wool, and the meatus filled with a powder composed of boric acid, to which 5 per cent. of Loretin had been added. This had for its object the prevention of accidental contamination from outside, either by dust falling on the ear, or the more likely way of the patient picking the ear with a dirty finger. I do not suppose that this powder is any better than many others that might be thought of, but at any rate it is good enough for the purpose. When the powder began to be washed away by the discharge, the syringe was again used and the process repeated. This procedure was adopted as often as necessary until the discharge ceased. This generally happened in about three weeks, but some cases healed inside eight days, and others not for five weeks.

The microscopic specimens taken from cases where the discharge was recent, nearly all contained macerated epidermis from the external meatus; and in some of these specimens there were to be seen lying between the scales of this epidermis cocci—apparently staphylococci—quite different in character from those to be found in the discharge. The relation of the staphylococci to the cells of the epidermis convinced one that they lay there before the



discharge set in, and were detached from the meatus through the accident of maceration. This shows the importance of disinfection of the external ear in such cases. I should, therefore, recommend that when measles or scarlatina has been diagnosticated the precaution should be taken of disinfecting each meatus by allowing some unirritating fluid antiseptic to soak into and macerate the skin for an hour or two, the patient being kept lying on the opposite side during the process. Such a procedure involves no technical knowledge, and could be easily performed by the nurse or anyone in charge. In fever hospitals a stock solution could be kept for the purpose, and used as a matter of routine. The following formula should answer the purpose very well:—

Aqueous sol. corrosive sublimate (1 in 1,000), 10 parts.

Glycerine - - - - - 1 part.

The only cases in which destruction of the tympanic membrane took place were the very rapid ones, where there was no time for observation between the onset of the inflammation and rupture of the drum—where the ear was to all appearance normal one day and discharging the next. The other cases—viz., those in which rupture took place after the inflammation had been some days established—healed without leaving the drum perforated. This tends to prove, in the first place, that the cases where paracentesis might be of some avail in preventing destruction are too rapid to give an opportunity for its performance, and, in the second, that wherever the opportunity is given it is better left undone, for the healing of the perforation demonstrates its futility, while the subsidence of the inflammation without rupture shows it would have been wrong.

It will be observed that I only impeach paracentesis as a *routine* treatment in ordinary acute otitis media. I cannot yet assume the responsibility of defining within strict limits the cases, if any, in which the operation is called for. Further experience and observation will probably render this possible. But I am strongly of opinion that in the large majority of cases where paracentesis is performed it is not merely unnecessary, but distinctly wrong.



I quite anticipate that these opinions will be freely challenged. Paracentesis as a routine treatment in acute otitis has, since its first introduction, so far as I am aware, never been questioned; but, on the contrary, is by every authority advocated and practised, so much so that there can be but few otologists who have ever allowed themselves to stand by and observe how a case would behave without puncture.

I feel I have only touched the borders of a vast and important territory. The cases that have come within the scope of my observation are not numerous enough, nor is their variety sufficiently great, even if the arguments were without flaw, to justify one in claiming that the contentions are beyond question or criticism, though I should be without apology if I were not a devout believer in the truth of the opinions to which I have given expression.

The results are, at any rate, sufficiently encouraging to induce me to hope that further investigation in this field may lead to more perfect treatment through fuller and more perfect understanding of the laws that govern Acute Otitis Media.

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ART. VI.—*Pneumonia : a Multiple Infection.*\* By J. W. MOORE, M.D., M.Ch., B.A. Univ. Dubl., F.R.C.P.I.; Diplomate in State Medicine and Ex-Scholar, Trin. Coll. Dubl.; Senior Physician to the Meath Hospital and Co. Dublin Infirmary; Professor of Practice of Medicine, Royal College of Surgeons in Ireland.

IN a suggestive paper on "Varying Infection in Pneumonia," which was published in *The New York Medical Journal*, October 9, 1897, the author, Dr. W. H. Thompson, M.D., LL.D., of the Bellevue Hospital, writes thus:—"Of late years lobar pneumonia often fails to follow the definite course commonly ascribed to it. While its onset remains much the same in its suddenness, and in the rapid development of its acute symptoms, yet for some time I have

\* Read before the Medical Section of the Royal Academy of Medicine in Ireland on Friday, November 19, 1897. [For discussion on this paper see page 80.]

declined to fix the probable date of the crisis or the duration of its subsequent stages. It may be that the advent in 1890-91 of the severest and most prolonged visitation of epidemic influenza recorded in history may have something to do with this change by contributing the influence of a mixed infection, but whatever be the cause, there is little doubt that acute lobar pneumonia now often departs more widely from its former characteristic course. In the histories of a series of eleven cases occurring consecutively in my winter service in Bellevue Hospital, in only three of them could it be said that they conformed to the old-fashioned type, with a definite crisis and a progressive change for the better afterward, while in three a partial crisis only occurred, and in five none at all. In eight out of the eleven the convalescence was very tedious, and marked by a variety of constitutional symptoms in which often the essentially toxic nature of the disease was strikingly indicated. Nothing could better illustrate than they did what a gain it was to modern pathology when lobar pneumonia was finally recognised as more an infection than an inflammation, and that its danger is due rather to systemic poisoning than to pulmonary damage. That infections by micro-organisms, however, should vary in their developments from time to time is what we should expect."

It will be observed from a close reading of the foregoing paragraph that Dr. Thompson inclines to the view that the varying phenomena presented by pneumonia in different cases probably depends upon a varying virulence of its supposed specific micro-organisms, the affection being regarded as an essential disease analogous to diphtheria, enteric fever, small-pox, or any other infective malady.

The micro-organisms in question are two—namely, (1) The Micrococcus of Sputum Septicæmia (Fränkel), *Micrococcus pneumoniae crouposæ* (Sternberg) or *Diplococcus pneumoniae* (Weichselbaum), and (2) the *Pneumococcus* (Friedländer) or *Bacillus pneumoniae* (Flügge). The former is now generally recognised as the usual agent in the production of acute croupous pneumonia, or, as I much prefer to call it, pneumonic fever. It was discovered by Dr. George M. Sternberg, now Surgeon-General of the United States Army, in

September, 1880, in the blood of rabbits inoculated subcutaneously with his own saliva. Talamon, in 1883, demonstrated the presence of this micrococcus in pneumonic sputum, while Sternberg himself, in 1885, identified it with the micrococcus in the rusty sputum of pneumonia by comparative inoculation and culture experiments.\* In 1886 Weichselbaum published the results of his extended researches relating to the presence of this micrococcus pretty constantly in the fibrinous exudation of croupous pneumonia. He obtained it in 94 out of 129 cases examined (fifty-four times in cultures). To this observer we owe the name *Diplococcus pneumoniae*, which serves to remind us that, as observed in the blood of inoculated animals, it is usually in pairs consisting of oval or lance-oval elements (cocci), which are surrounded by a transparent capsule.

The second pneumonic micro-organism was obtained in 1883 by Friedländer and Frobenius in pure cultures from the exudate into the pulmonary alveoli in cases of croupous pneumonia. Subsequent researches show that this microbe, in shape a short rod with rounded ends—hence called *Bacillus pneumoniae* by Flügge—is present only in a small proportion of the cases—9 times in 129 cases examined by Weichselbaum, 3 times in 70 examined by Wolf, who pursued his studies in Weichselbaum's laboratory at Vienna.

Emmerich has demonstrated the presence of Friedländer's *Pneumococcus* in the soil of a room in which there were many pneumonia patients. The diagnosis was rendered certain by inhalation experiments with cultivations on 18 mice, of which 8 died of pneumonia. "Hence," says Flügge, "the soil seems to be one of the places where the pneumonia bacilli can be preserved, and whence, in suitable cases, they may pass into human beings."<sup>b</sup>

Flügge also says "Friedländer's bacilli are, without doubt, not the only cause of the pneumonic process. We are already acquainted with pneumonias which are caused by *aspergillus* and *actinomyces*; it is *à priori* not improbable that also among bacteria there are several other species

\* American Journal of the Medical Sciences. July 1st, 1885.

<sup>b</sup> Micro-organisms. By Dr. C. Flügge. Translated by W. Watson Cheyne, M.B. London: The New Sydenham Society. 1890. Page 259.

which can set up pneumonia." Now this is the very point I wish to enlarge upon in the present communication.

The subject may be considered from both an ætiological—or, we might say, a bacteriological—and a clinical standpoint. Naturally, it is chiefly from the latter point of view that I have had opportunities of regarding the question. It is impossible, however, to ignore the bacteriological aspects of the case.

In support of Flügge's statement just quoted, I propose to adduce evidence that the micro-organisms peculiar to erysipelas, to influenza, to tuberculosis, and to enteric fever may one and all give rise to a specific pneumonia or pneumonic fever. So also may Löffler's diphtheria bacillus and the bacillus of malignant anthrax, as well as other pathogenic bacteria.

#### I. ERYSIPELAS.

In the form of this disease, which has been called "erratic"<sup>a</sup> or "vagrant erysipelas" (*Erysipelas migrans*)—the *erysipèle ambulante* of French writers—the attack may be protracted for one or two months. In such cases, not only every part of the surface of the body, but the whole tract of mucous membranes, and even the lungs and pleuræ, may in turn become affected. Dr. Péter,<sup>b</sup> of Paris, has drawn attention to the spread of erysipelatous inflammation from the pharynx to the respiratory passages, causing in sequence bronchitis, bronchiolitis (capillary bronchitis), and pneumonia.

In a case observed by me at Cork-street Fever Hospital many years ago, the converse of this happened. A man was admitted suffering from *Pneumonia migrans*. After some days a blush of erysipelas showed over one shoulder, and spread thence down the back, with the interesting result that simultaneously the pneumonic symptoms subsided. So great was the impression made upon me by this case that ever since I have recognised the propriety of looking upon *Erysipelas pulmonum* as a distinct species of the great genus *Pneumonia*.<sup>c</sup>

<sup>a</sup> Wunderlich. *Spec. Path. Therap.* Theil III. Abth. 2, B. Page 351.

<sup>b</sup> Dictionnaire encyclopédique des Sciences Médicales. Tome IV. Page 720. Art. "Angines."

<sup>c</sup> Cf. Wilson Fox, *Diseases of the Lungs and Pleura*. London, 1891, page 336. Also see Trousseau, *Clinique médicale de l'Hôtel Dieu*, Tome I., page 609; and Reynaud, art. "Erysipèle," *Dict. de la Méd. et Chir. pratiques*, Tome XIV., page 72.

Grisolle quotes from Serres a case of a patient who had several attacks of pneumonia, each terminating in an attack of erysipelas. Wilson Fox states that he had seen only one such case. The erysipelas appeared three days after complete defervescence, and the resolution of the pneumonia and the subsequent recovery of the patient were greatly protracted.

The teaching of Levy,\* of Strassburg, that *Streptococcus pyogenes* is an exciter at once of suppuration and of erysipelas is now generally accepted. This pyogenic bacterium was obtained by Fehleisen from the skin involved in cases of erysipelas in 1883, and by Rosenbach and Passet from the pus of acute abscesses within a year or two afterwards. Sternberg gives the following synonyms for *Streptococcus pyogenes*—*Micrococcus* of erysipelas (Fehleisen), *Streptococcus erysipelatos*; *Streptococcus* of pus, *Streptococcus longus* (von Lingelsheim).

If, then, we admit the identity of the pus-producing streptococcus with that of erysipelas, we at once obtain a key to the occurrence of an acute pneumonia in erysipelas. For this very bacterium—the *Streptococcus pyogenes*—plays a part that is second to none in the production of influenza-pneumonia, to which I will now direct your attention.

## II. INFLUENZA.

In the great epidemic of 1889-90 in Dublin, it was my lot to see fatal cases of influenzal bronchitis, pneumonia, pleuritis, and heart failure. In a paper on the epidemic, read before this Section on Friday, February 28, 1890, I wrote as follows:—"The pneumonia [of influenza], while producing the ordinary physical signs of acute croupous pneumonia, is often latent in its course, or accompanied by a profuse mucopurulent expectoration, with scarcely any rusty sputa. The ebbing of the strength in some of these cases in elderly people is something awful—it is often absolutely beyond control." The fact is that influenza, infrequently directly fatal, causes an indirect loss of life which is appalling, chiefly through the complications affecting the respiratory organs and the heart which have just been mentioned.

\* Ueber die Mikro-organismen der Eiterung. (Archiv. für experiment. Path. und Pharm. XXIX. Page 135).

It will be remembered that, after the great pandemic of influenza in 1889-90, German medical literature in particular was flooded with writings upon the clinical, pathological and bacteriological aspects of the malady. In the *Dublin Journal of Medical Science* for May, 1890,<sup>a</sup> and August, 1890,<sup>b</sup> will be found Reports on the Bacteriology and Pathological Relations of Influenza, which I prepared from current German medical literature. From these Reports I cull the following facts:—

Leyden, in a communication to the Medical Society of Berlin,<sup>c</sup> states that the pneumonias observed by him showed a peculiar course—severe pain in the side and dyspnoea were rarely noticed; the local process was not altogether typical; frequently it was necessary to watch for 3 or 4 days before any evidence of a localisation of the disease was forthcoming. Then a crepitating râle was heard over a wide area, and this perhaps the very next day would have disappeared to show itself in some other situation. Not very often a firm hepatisation occurred with clearly mapped out dulness. Again the typical sputum of pneumonia was often wanting. Bacteriological investigations revealed the presence of three kinds of microbes—(1) Diplococci, which represented the well-known pneumonia-diplococci of Fränkel, (2) Streptococci, (3) Staphylococci. Leyden adopted the view that the forms of pneumonia are different—typical genuine pneumonias with deviating course; mixed forms, especially in those combined with pleural effusion; lastly, simple streptococci pneumonias.

Ribbert,<sup>d</sup> discussing the possibility of a causal significance of the *Streptococcus pyogenes* in relation to the phenomena of influenza, alludes especially to the inflammations of the lungs, whose peculiar, erysipelas-like spread, on which Finkler lays so much stress,<sup>e</sup> and whose anatomical relations admit of being referred back to the influence of the streptococcus. Ribbert points out<sup>f</sup> that, in contrast to ordinary croupous

<sup>a</sup> Vol. LXXXIX. No. 221. Third series.

<sup>b</sup> Vol. XC. No. 224. Third series.

<sup>c</sup> Berliner klin. Wochenschrift. 1890. No. 10.

<sup>d</sup> Deutsche med. Wochenschrift. 1890. No. 15.

<sup>e</sup> Deutsche med. Wochenschrift. 1890. No. 5.

<sup>f</sup> Deutsche med. Wochenschrift. 1890. No. 4.

pneumonia, the cut surface of the hepatised lower lobe in three cases presented an almost smooth appearance, the exudation was soft, very rich in cells, and poor in fibrin (hypinosis). Cultivation experiments with the tracheal mucus, the lung tissue, the spleen, and the kidneys, furnished in 5 out of 8 cases the *Streptococcus pyogenes*, or else the *Streptococcus erysipelatosus* (which has been shown to be identical with the former), the presence of which microbe could be demonstrated in the sputum also of the influenza patients. His investigations on the whole yield the result that in all cases in which micro-organisms were at all capable of demonstration, the *Streptococcus pyogenes* was found. Only once was there in addition a coccus which had a great resemblance to the *Diplococcus pneumoniae* and probably represented a modification of the same.

Finkler<sup>a</sup> observed 45 cases of influenzal pneumonia, of which only 2 came under the description of typical lobar pneumonia, while the other 43 were regarded as cases of the disease which he has often described as "Streptococcus Pneumonia." Seven of his patients died, *post-mortem* examinations being made in three instances. He regarded the pathological condition as a preponderating cellular inflammation with participation of the interstitial tissue. The cellular nature of the inflammation, together with the pronounced tendency it exhibits to develop by spreading indefinitely, in Finkler's opinion justified him in describing this disease as an erysipelas of the lung. He points out that the resemblance of this form of pneumonia to erysipelas consists, not alone in the anatomical characters of the inflammatory process, but also in the fact that both diseases depend on the presence of streptococci. Finkler looks upon this streptococcus-pneumonia as a localisation of the exciting cause of influenza in the lungs. As to this last point I would be more inclined to agree with Leyden<sup>b</sup> and Levy<sup>c</sup> that the question is much more one of a secondary infection, for which the influenza merely laid the foundation. Certainly the discovery by Pfeiffer, in 1892, of the *Bacillus influenzae* in the purulent

<sup>a</sup> Deutsche med. Wochenschrift. 1890. No. 5.

<sup>b</sup> Loc. cit.

<sup>c</sup> Berliner klin. Wochenschrift. 1890. No. 7.



bronchial secretion, and by Canon in the blood of patients suffering from epidemic influenza, must be regarded as conclusive proof of the existence of a specific primary infection to which all other infections are accidental and secondary.

### III. TUBERCULOSIS.

It is not my intention here to allude to acute tubercular fever (in which the lungs may escape unscathed) on the one hand, or on the other to the local peri-pneumonic processes which accompany sporadic depositions of tubercle in the lungs in ordinary catarrhal phthisis. Nor will I refer to those cases in which in the wake of an acute primary croupous pneumonia the wounded lung falls a ready prey to a secondary infection by the *Bacillus tuberculosis*, when this micro-organism finds a fertile soil in the caseating exudation of an unresolved pneumonia. These several conditions are all beside the present question.

My concern is with acute phthisis, or scrofulous pneumonia, and the so-called acute tuberculo-pneumonic phthisis. Dr. C. Theodore Williams thus describes acute phthisis<sup>a</sup>:—"The patient, generally young, who may have had cough previously, is attacked with sharp pain in one side of the chest, quick pulse, high temperature, the skin being quite burning to the ear of the auscultator, alternating with night chills and sweats. The general appearance betokens pneumonia, but the crepitation commences at the apices, extending to the whole lungs, and is not so fine and even as in pneumonia. The cough increases; the expectoration becomes opaque and purulent, containing quantities of lung tissue and swarms of tubercle bacilli; and the temperature assumes the intermittent type. The physical signs show at first gradual consolidation of both lungs, but later on indicate that excavation has taken place; and continues, the patient rapidly wasting and dying in a few weeks." In this disease the inflammatory nature of the lesions in the lung or lungs, and the rarity of miliary tubercle, are among its characteristics.

Acute tuberculo-pneumonic phthisis likewise presents consolidations in the lungs of a pneumonic origin, but tuberculisation, as well as pneumonia, exists.

<sup>a</sup> Quain's Dictionary of Medicine. Vol. II. Art. "Phthisis." New Edition. 1894.



In both these varieties of "Consumption" we have examples of true pneumonia resulting from an infection by the *Bacillus tuberculosis* of Koch.

#### IV. ENTERIC FEVER.

It is well known that pneumonia is more commonly observed as a complication in enteric fever than in typhus. Murchison noted it in 13 out of 100 cases, and Austin Flint (according to Bartlett<sup>a</sup>) in 12 out of 73 cases. It commonly occurs in the third or fourth week, but may usher in the disease. In this latter case its presence is probably an indication that the enteric fever poison has entered the system through the lungs. It is most commonly a *lobular pneumonia*, but occasionally it occurs under the form of ordinary *croupous pneumonia*.

It is, indeed, true that Eberth points out<sup>b</sup> that anatomical investigations had (up to 1881) afforded no evidence of the admission of the *Bacillus typhosus* through the lungs. With this Gaffky<sup>c</sup> does not agree, for he considers it highly probable—or at least the possibility cannot be contested—that the lungs may occasionally represent the seat of invasion. Eberth himself quotes a case observed by W. Meyer,<sup>d</sup> of Berlin, in which death ensued on the second day of illness. In this case there were found at the autopsy hyperæmia of the lungs, spleen, and kidneys, in the lower portion of the ileum marked swelling of the solitary follicles and Peyer's patches. Microscopical examination revealed a very exceptionally large deposit of Eberth's bacilli in the cells of the submucosa and in the intermediate muscular layers of the intestine. Apparently they were not found in the lungs, notwithstanding their hyperæmic condition.

That, in infective diseases in general, infection may occur through the mucous membranes of the respiratory tract, has been demonstrated (according to Sternberg<sup>e</sup>) by several

<sup>a</sup> The Fevers of the United States. Fourth Edition. Philadelphia. 1856.

<sup>b</sup> Virchow's Archiv. LXXXIII. 486. 1881.

<sup>c</sup> On the Ætiology of Enteric Fever. Mittheilungen aus dem Gesundheitsamte. B. II. Berlin. 1884.

<sup>d</sup> Untersuchungen über den Bacillus des Abdominal-typhus. Inaugural Dissertation. Berlin. 1881.

<sup>e</sup> Sternberg. Loc. cit. 230.

bacteriologists—especially by Buchner, who caused mice and guinea-pigs to breathe an atmosphere containing in suspension a powder consisting of dried anthrax spores mixed with lycopodium powder, or pulverised charcoal. In a series of 66 experiments, 50 animals died of anthrax, 9 of pneumonia, and 7 survived. Microscopical examination of sections and culture experiments showed that the lungs were extensively invaded. It may be objected that these results do not bear on infection by the *Bacillus typhosus*, which is believed not to assume the spore form. Positive results were, however, also obtained by Buchner with cultures of the anthrax bacillus *not containing spores*, which the animals were made to inhale in the form of spray. But in this case a considerable quantity was required, and a *sero-fibrinous pneumonia* was usually produced, as well as a general infection. “That man may be infected with anthrax by way of the respiratory organs,” writes Sternberg,<sup>a</sup> “seems to be well established. In England the disease known as ‘wool-sorters’ disease’ results from infection in this way among workmen engaged in sorting wool, which is liable to contain the spores of the anthrax bacillus when obtained from the skin of an animal which has fallen a victim to this disease. That infection occurs through the lungs is shown by the fact that these organs are first involved, the disease being, in fact, a pulmonic anthrax.”

Even if we take it as not yet proved that infection in enteric fever may occur by way of the lungs, there is no doubt that a close correlation exists between this disease and that variety of acute pneumonia, or pneumonic fever, to which the term “Pythogenic Pneumonia” has been commonly applied since 1875, when Dr. Grimshaw and I read a paper on the subject before the Medical Society of the College of Physicians of Ireland.<sup>b</sup>

Towards the end of October, 1882, the following remarkable outbreak of disease came under my notice. On the 12th of that month a lad, aged thirteen, was admitted into Cork-street Fever Hospital from 6 Malpas-street, Dublin, suffering from croupous pneumonia.

<sup>a</sup> Loc. cit. Page 231.

<sup>b</sup> Dublin Journal of Medical Science. Vol. IX. No. 41. Third Series. May, 1875. Page 399.

Malpas-street is very unhealthy—the houses are old and dirty, ill-drained and dilapidated. The street runs down to the bottom of a valley, through which a small tributary of the Poddle river flows sluggishly. The district is a prolific hotbed of disease. On October 31 the boy's father (John C.), a boatman, thirty-six years of age, came in with the same disease. On the 20th of the same month two girls, both aged fourteen, were admitted to the Meath Hospital in enteric fever—one from 11 Malpas-street and the other from No. 13. On November 27 a girl, aged twenty, was admitted to Cork-street Hospital in enteric fever from 7 Malpas-street, next door to the house from which the two cases of pneumonia had come a few weeks previously. On December 12 John C., aged thirty-six, was again admitted to the Meath Hospital from 6 Malpas-street with "renal dropsy." It was he who suffered from pythogenic (?) pneumonia in the previous October, as narrated above. Another coincidence occurred in March, 1883. On the 18th of that month Winifred N., aged nineteen, came into Cork-street Hospital from 6 Malpas-street in an attack of "febricula," and the following day Anthony L., aged twenty-seven, was admitted from the same house with left basic croupous pneumonia.

A very similar instance of the correlation existing between enteric fever and pneumonia came under my observation in the autumn of 1881. Four cases of illness occurred in a training college in Dublin within a few weeks. Two of the four patients suffered from true enteric fever; a third, from an attack of acute gastro-intestinal catarrh, or—as some may think—from an abortive enteric fever; and a fourth from acute pneumonia, reminding one of Laennec's "epidemic pneumonia," which in recent times has received the names of "sewer-gas pneumonia" and "pythogenic pneumonia." The drinking-water was proved by Sir Charles A. Cameron to be the source of the sickness in all four cases.\*

In November, 1891, there came under my care in the Meath Hospital a young woman with characteristic typhoid stools, and whose urine gave a striking reaction with Ehrlich's diazo test. Her illness, however, had commenced with right

\* Dublin Journal of Medical Science. Vol. LXXIII. No. 122. Third Series. February, 1882. Page 131.

apex pneumonia, with rapid breathing, cough, glutinous expectoration (not indeed deeply coloured when the patient was first seen by me), dulness on percussion, and, finally, the most typical *crepitus redux*.

One of the reasons which weighed with me in undertaking to make the present communication to the Royal Academy of Medicine was the remarkable tendency to a pneumonic element in enteric fever which has shown itself in Dublin during the present season. It will be remembered that the end of August and beginning of September proved both wet and cold, while the air-temperature continued below the average through the greater part of September.

These atmospheric conditions were doubtless the prime reason why the epidemic enteric fever assumed the so-called *thoracic* form. I venture to submit brief notes of two cases in illustration of this statement.

CASE I.—Robert A., aged forty, a bootmaker, was admitted to the epidemic wing of the Meath Hospital, from New-street, on September 17, 1897, on the eighth day of his illness. His evening temperature was  $104.3^{\circ}$ , pulse 100, respirations 32–36. When I saw him next morning I found him suffering from acute catarrhal laryngitis; the base of the left lung was quite dull, with the other signs of consolidation. He was expectorating a viscid sputum from which the rusty colour was already quickly disappearing. There was active diarrhoea, the daily number of motions varying from three to seven. Forty-eight hours after admission, profuse intestinal hæmorrhage occurred, after which the attack ran the usual course of a typhoid fever, with laryngeal and pulmonary trouble (“laryngo-typhus” and “pneumo-typhus”). Laryngeal examination by Dr. Richard Lane Joynt revealed a severe catarrh. The chart is a characteristic one of enteric fever, but the rapidity of the respirations sufficiently indicates the severity of the pulmonary lesion. In convalescence the patient suffered from boils as a secondary infection.

CASE II.—Julia B., aged twenty-two years, a domestic servant, was admitted to the epidemic wing of the Meath Hospital, from Ranelagh, on September 15th, 1897. She was then a week ill. She was sent in as suffering from acute pneumonia, and the physical signs of a left basic lobar pneumonia were present. She breathed from 40 to 44 times a minute, while her pulse at first did not exceed 100, although some days later it rose to 120. The temperature

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was only  $101^{\circ}$  on the evening of her admission, but gradually rose until the evening of the twelfth day of her illness, when it reached  $104.3^{\circ}$ . For several days the patient's condition was extremely unsatisfactory, and in appearance and physical signs the case strongly resembled acute phthisis, or "scrofulous pneumonia." However, she gradually emerged from the fever, the evening spiking of the temperature subsiding after the twenty-fourth day. She left hospital for the Convalescent Home at Bray on October 22nd, the forty-fifth day from the commencement of her attack. At that time the state of her left lung remained far from satisfactory, though it was fast improving. There was still dulness on percussion over the base, the breath and voice sounds were feeble, and some effusion still existed in the pleura.

These cases are types of the form which enteric fever assumed in the unseasonably cold after-summer of the present year. That the lung attacks were the outcome—direct or indirect—of a specific poisoning by Eberth's bacillus can scarcely be doubted. This poisoning may, it is true, have been secondary to a localisation in the intestine, although the fact that in each case the lung trouble occurred at the outset of the fever points with much force to a primary localisation in the lungs. However that may be, the presence of an acute pneumonia in each case must be conceded.

Drs. Muir and Ritchie, writing in 1897,<sup>a</sup> say that most observers will agree with Gaffky in attributing any failure to find typhoid bacilli in the organs of a typhoid patient to the difficulties of the search.

These writers further state that in the lungs there may be patches of congestion and of acute broncho-pneumonia. In these, typhoid bacilli may sometimes be observed, but evidence of a toxic action depressing the powers of resistance of the lung tissue is found in the fact that pneumococcus is frequently found in such complications of enteric fever.<sup>b</sup> As to this, I repeat that the very early appearance of pulmonary trouble in a certain proportion of cases which ultimately prove to be undoubtedly enteric fever is altogether in favour of a primary infection with the *Bacillus typhosus* by way of

<sup>a</sup> *Manual of Bacteriology*. Edinburgh and London: Young J. Pentland. 1897. Pp. 298.

<sup>b</sup> *Loc. cit.* Pp. 312.

the lungs. A pneumonia brought about through lessened resistance to the specific micro-organisms of this disease caused by the toxic action of the typhoid bacillus on the system in general, including the organs of respiration, would be much more likely to develop in a more advanced stage of the fever.

In conclusion, I venture to submit that there is clinical evidence to show that a true pneumonitis may occur in any one of the four diseases with which this communication deals—that is to say, erysipelas, influenza, tuberculosis, and enteric fever. Further, it is reasonable to suppose that in each case the pneumonitis is directly due to a localisation of the specific poison of the disease in the lung, whether that poison be a micro-organism itself, or a toxin derived therefrom. Indeed, in respect of three out of the four diseases named, the evidence, from a bacteriological standpoint, in favour of such a view is incontrovertible.

As regards enteric fever, the influence of season and weather in determining pneumonic trouble is, no doubt, considerable; but it cannot be accepted as paramount or exclusive. And, if it is objected that the *Bacilli typhi abdominalis* of Eberth have not as yet been often found in the lungs or sputum of enteric fever patients, I am justified in attributing this to the comparative infrequency with which, so far, search has been made for these bacteria in the pulmonary organs. Here, in any event, an almost untrodden path of investigation lies open to the adventurous footsteps and the keen perception of our Irish pathologists and students of bacteriology.

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“THE LARYNGOSCOPE.”

SINCE we last alluded to the intended publication of a European edition of the “Laryngoscope,” we have learned that Dr. St. Clair Thomson, of London, has definitely accepted the editorship of that edition. No worthier or better choice of an editor could have been made. It is purposed to give the journal a thoroughly comprehensive and cosmopolitan character, so that its contents will prove of interest to the general practitioner as well as to the specialist. The first number of the edition for Europe, India, and the Colonies will be issued by Messrs. J. Wright & Co., of Bristol, in the current month (January, 1898).



## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Surgical Pathology and Principles.* By J. JACKSON CLARKE, M.B. (Lond.), F.R.C.S. With 194 Illustrations. London: Longmans, Green & Co. Pp. 440. 1897.

IN the introduction Mr. Clarke emphasises points of much importance; and one that is not sufficiently impressed on most workers is—that the clinical should not be divorced from the purely laboratory aspects of specimens. The first chapter deals with questions of general import, brief but clear explanations being given of atrophy, hypertrophy, and the different degenerations.

The next chapter is devoted to the repair of the different tissues after injury. The repair of a severed tendon is taken as an example, and it is clearly and distinctly described.

Chapter III. deals with inflammation; Chapter IV. with infective inflammatory processes.

Chapter V. deals with new growths. This chapter deals effectively with tumours, and should smooth the way of the student towards a good working knowledge of the subject. The diagrams and microscopic sections shown are well selected, and what they lose in artistic appearance is more than made up for in the clearness of detail, which is of so much importance to the beginner. The contrast between the malignant and benign tumours is clearly drawn. Then follows a chapter on dermoids and such formations, and another on the different malformations.

Chapter VIII. deals with diseases of bone, and the author deserves great credit for having brought into the space of little more than thirty pages a vast amount of useful information, the more important parts of which are rendered perfectly clear by illustrations judiciously selected from the most reliable sources, or specially prepared for this work.

The next chapter, dealing with diseases of the jaw, is somewhat meagre, many important affections being omitted.

Chapter X., on the other hand, is a pleasantly written and fairly exhaustive description of the condition (macro- and microscopic) found in the different joint diseases; but here, as in other parts of the work under review, there is an attempt made to indicate in a brief way the treatment of the diseases described. This is the only weak point in a work otherwise well up to date. Diseases of muscles and nerves are briefly dealt with next, and then follow, clearly put, chapters on diseases of arteries, veins, and lymphatics.

The chapters dealing with intestinal obstruction and peritonitis are well illustrated, and go thoroughly over the ground-work of the subjects.

The chapters on the liver and gall-bladder are very short and the illustrations crude. This also applies to the chapters on injuries of the head and diseases of the ear.

To the affections of the genito-urinary organs thirty-nine pages are devoted, and they are full of reliable information, the illustrations being, as a rule, well executed and soundly educational.

Taken as it stands, the book is well worthy of perusal, and many a student and not a few teachers will turn away from the larger and more discursive works to refresh their memories by glancing at pages that never tire and are always accurate.

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*A Course of Practical Histology.* By EDWARD ALBERT SCHÄFER, LL.D., F.R.S., Jodrell Professor of Physiology in University College. London: Smith, Elder & Co. Second Edition. 1897. Pp. 298+11.

THIS work, which now appears in a new edition, was well known by all teachers of Histology a few years ago, and has fallen out of repute only through the discovery of many new methods, which are now included.

As the author states in his preface, no attempt has been made to give anything like a complete account of modern methods, a course which largely increases the value of the book. The number of new methods recently described is

very great, and a great many of these are of doubtful value. In a book, therefore, intended as a guide in practical work, a selection of the methods possessed of greater merit is necessary, and where this selection is made by a teacher of great experience, there is a sort of guarantee that success will follow their employment. Although the intention of the author is to assist students of histology to carry on their work independently of the constant presence of the teacher, yet there are many past that rank who will gain very great help from this book. Many medical men try to prepare tissues and cut sections of them—sometimes from normal, though perhaps more generally from abnormal, tissues—to such this work should prove particularly useful. The general methods are the same in both cases. Here selected trustworthy methods can be readily found, instead of the somewhat bewildering number of methods in the larger works.

The first fifty pages are devoted to the more general methods, such as the preparation of reagents and section cutting. The remainder of the work is devoted to a more detailed description of the methods applicable to the study of the tissues and organs of the body.

There is no description of the microscopical anatomy of the tissues—such being found in other works by the same author and elsewhere, but as a reliable description of the methods by which the anatomy can be learned, this work may be confidently recommended.

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*A System of Medicine by Many Writers.* Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A.; Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College. Volume IV. London: Macmillan & Co., Limited. New York: The Macmillan Company. 1897. 8vo. Pp. 880.

IN the preface to this, the fourth, volume of the "*System of Medicine*" the editor makes an important announcement. "I can no longer conceal from myself" he writes, "nor from my readers that the *System of Medicine* will not be

contained within the five volumes at first proposed; one additional volume at least will be required." Thus the work is likely to be made up of six volumes on Medicine and one on Gynæcology. The extension of the medical portion has been rendered necessary, in particular, because of the immense amount of new material connected with Infectious Diseases.

The contents of the fourth volume are of great interest and importance. First come diseases of the liver, occupying 261 pages, or considerably more than a fourth part of the book. Dr. Fitz, Harvey Professor of the Theory and Practice of Physic in Harvard University, contributes an article on diseases of the pancreas. Diseases of the kidneys follow, taking up about 180 pages. The remainder of the volume is devoted to diseases of the lymphatic and ductless glands, certain subjects in relation to diseases of the respiratory organs, and lastly, diseases of the nose, pharynx, and larynx.

An article on "Obesity" from Sir Dyce Duckworth's pen is interpolated a little awkwardly at page 607. There can be no question as to the excellence of the article, *aber was für ein Wort ist* "Pinguence?" We cannot find it in any general or medical dictionary to our hand, and surely it should, in any case, be spelled "Pinguescence" not "Pinguence." The author's views on treatment will meet with general acceptance. In discussing dietetics Sir Dyce describes only to condemn the so-called Banting treatment. "This method," he says, "is unsatisfactory in principle and practice; partly because of the digestive inadequacy of the body to deal with so much nitrogenous matter, and partly because of the slender value of it as a heat-producer within the organism. The nervous system also suffers from deprivation of fatty matters in such a diet." (Page 616.)

The section of the volume which treats of liver diseases opens with a series of masterly articles by Dr. William Hunter, Pathologist to Charing Cross Hospital. Nothing can be clearer than his description of the general pathology of jaundice. As regards non-obstructive jaundice, he rejects Frerich's hypothesis that the fault lies in the blood,

and that the jaundice results from an accumulation of bile pigments imperfectly oxidised in the blood. He equally rejects the suppression hypothesis on the ground that the chief constituents of the bile do not pre-exist in the blood, but are formed by the liver. The “hæmatogenous doctrine,” promulgated by Kühne, in 1858, is accepted by Dr. Hunter. It is, he says (page 57), “based upon a fact of definite importance, namely, that the bile pigments are derived from hæmoglobin, and not infrequently appear in the urine after a liberation of hæmoglobin in excess. Where this doctrine proved wanting was not in facts, but in the interpretation of them.”

Dr. Hunter's views as to the causation of jaundice in poisoning by phosphorus, toluylendiamin, arseniuretted hydrogen, and so on, are worthy of due consideration. According to him, a poison (or its products) is likely to cause jaundice in proportion as it is capable of exciting catarrh of the bile passages during its elimination by the liver. As a result of his experimental investigations he recognises a “descending” (toxæmic) catarrh of the bile-ducts as distinguished from the ordinary “ascending” or duodenal catarrh. In other words, in poisoning an extensive catarrh invades the intrahepatic bile-ducts from their origin downwards, increased viscosity of the bile being the result.

The articles on the so-called Weil's disease, and acute yellow atrophy of the liver, are also from Dr. Hunter's pen. In respect to the former malady, few will dissent from the author's common-sense opinion that, “until the nature of the infecting agent can be determined, no advantage is to be gained from regarding a condition which probably owes its origin to different infective agents in different localities as a special disease, or in giving to it the name of any one observer. The older name of ‘infectious jaundice’ serves sufficiently to describe it.” (Page 100.)

Dr. Hunter's account of acute yellow atrophy of the liver is based mainly on fifty cases which he collected in the records from 1880 to 1894, inclusive. If we may presume to say so, the author seems to us to coquette too

much with the view that "this rarest of diseases" is a form of phosphorus poisoning. That this is not really his opinion is quite clear from the care he takes in pointing out the differences which exist between the two conditions. He shows that enlargement, not atrophy, of the liver is usual in phosphorus poisoning, in which also fatty filtration takes place, whereas in acute yellow atrophy the change appears to be a necrobiotic one from the outset; the cell breaks down into fatty detritus at once. He adds that chemical analysis confirms this difference in the character of the changes in the two diseases. The percentage of fat in the liver of phosphorus poisoning is very greatly increased from 3 to 30 per cent.—that is, tenfold; whereas in acute yellow atrophy it is only slightly increased, to 4 or 5 per cent. He likewise lays stress on the fact that in outbreaks of severe epidemic jaundice cases indistinguishable from acute yellow atrophy have been met with. He alludes particularly to an outbreak, recorded by Meinert, which took place in Saxony and Dresden in the autumn of 1889. His final creed is embodied in this sentence: "The evidence in favour of acute yellow atrophy being a rare form of malignant jaundice of obscure infective nature, appears to me far to outweigh that of any of the other of the propositions I have cited." (Page 115.)

One of the most novel articles in the section on diseases of the liver is an account of "Amœbic Abscess" by Dr. Henri A. Lafleur, of McGill University, and Physician to the Montreal General Hospital. His definition of the affection runs thus—"Abscess of the liver, single or multiple, occurring in association with dysenteric ulceration of the bowel, active or latent, in which the amœba coli is found bearing a relation to the hepatic lesions analogous to that which it bears to the intestinal lesions." In 1887, Kartulis, of Alexandria, described the occurrence of living motile *amœbæ* in the contents of an hepatic abscess. His observations have since been repeatedly confirmed in America by Osler, Councilman and Lafleur, Musser and others; and more recently in Egypt by Kruse and Pasquale, in their extended investigation of amœbic enteritis and hepatitis.

This pathological discovery throws a flood of light on

the hitherto obscure and difficult subject of the relation of hepatic abscess to dysentery. In all the recorded cases amoebic abscess of the liver has arisen secondarily to an attack of amoebic dysentery. Whether an amoebic abscess can form in the liver independently of any intestinal lesion is a question that is still undecided. With the so-called idiopathic or non-amoebic abscesses the case is entirely different. Such abscesses usually, if not always, appear independently of intestinal affection, and are not followed by it.

In passing from diseases of the liver we should not omit approving mention of Mr. A. Mayo Robson's account of diseases of the gall-bladder and bile-ducts. The same able surgical writer treats of "cholangitis."

The section on Diseases of the Kidney opens with a long and able article on the general pathology of the renal functions, by Dr. John Rose Bradford, Physician to University College Hospital. It is followed by an account of movable or floating kidney, by Professor Alexander MacAlister, of the University of Cambridge. He adopts the novel term "nephroptosis" (falling of the kidney) to denote the condition. In the list of references, Dr. MacAlister omits any mention of Dr. Arthur Wynne Foot's classical article on "Movable Kidney," which appeared in the seventy-first volume of the *Dublin Journal of Medical Science* (No. 113, Third Series, May, 1881, page 385). He does, however, quote Dr. Kendal Franks' communications on the subject.

Dr. W. Howship Dickinson contributes a long article on "Diseases of the Kidney, characterised by Albuminuria." It is an able and exhaustive communication, the only fault with which we have to find lies in the somewhat egotistical way in which the author refers to his own work—no doubt admirable—in this field of research. Twelve out of 20 bibliographical references at the end of the article are to Dr. Dickinson's own writings.

Mr. Henry Morris, Senior Surgeon to the Middlesex Hospital, discusses the surgical aspect of kidney affections in a series of articles.

"Diseases of Lymphatic and Ductless Glands" follow. To Dr. Ord, "Myxœdema" has been entrusted as a matter



of course. The same writer and Dr. Hector Mackenzie conjointly describe "Graves' Disease," while Dr. George R. Murray, of Newcastle, tells the story of Hodgkin's Disease. Dr. Humphry Davy Rolleston treats of the difficult subject of Addison's Disease. He also describes diseases of the spleen. Apart from its intrinsic merit, the article on Graves' disease is rendered especially valuable as a work of reference by the very copious bibliography which is appended to it. It includes no fewer than 290 entries, and is a monumental work in itself.

The closing section of this volume of the "System of Medicine" deals with diseases of the nose, pharynx, and larynx. The names of three authors are particularly identified with this portion of the work—namely, Sir Felix Semon, Dr. F. de Havilland Hall, Physician to the Westminster Hospital, and Dr. P. Watson Williams, of the Bristol Royal Infirmary.

We notice, with regret, that not a single Irishman is included in the list of contributors to this volume, which, notwithstanding, is a worthy successor of its predecessors.

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*Reference Book of Practical Therapeutics.* By various Authors. Edited by FRANK P. FOSTER, M.D. 2 Vols. London: Smith, Elder & Co. 1897.

THIS bulky work, comprising over 1,200 pages, large octavo, in double columns, is a composition emanating from the pens of a number of American writers, under the supervision of Dr. Foster, editor of the *New York Medical Journal* and of "Foster's Encyclopædic Medical Dictionary."

The subject-matter is alphabetically arranged, yet a very full general index, of nearly 100 pages, is supplied, and there is likewise an extensive index of diseases and remedies.

The leading idea of the work seems to be a protest against the current "therapeutic nihilism" which has been deplored by some recent authorities. It does not enter into details of materia medica or pharmacy, nor does it deal exhaustively with experimental pharmacology; but it attempts to skim the therapeutic cream off all available



sources of knowledge, and purports to give such account of drugs and remedies as will be of real service to the practising physician. This is an ambitious aim, and one that from the nature of the case must be circumscribed by many limitations. Still we are bound to say that a large measure of success has been attained, and a useful and comprehensive work of reference has been produced. Most of the important recent drugs and preparations receive sufficient notice.

The enormous number of topics discussed precludes any detailed review. Suffice it to say that from an examination of the book we can testify to its general accuracy, to the care and discretion with which it has been edited, and to the judicious and practical manner in which the subjects are handled.

A large mass of valuable information is condensed within its pages, and every one in medical practice who purchases it will find it a useful and reliable work for consultation.

Due regard is paid to methods of treatment which have lately attracted much attention. For example, under "Baths" (Supplement), we have a full and clear account of the Schott treatment as carried out at Nauheim; and, again, no fewer than 28 pages are allotted to the subjects of Serum and Serum Therapy. Scarcely a single misprint is to be found. If disposed to be hypercritical we might point to some pedantic terms—*i.e.*, elæomyenchesis, thalasso-therapy, &c., and we may ask the authority for the spelling of "Meiotics" in lieu of the ordinary form, myotics. Is not myotic the adjectival form of myosis, and is not this derived from  $\muύω$ , to shut the eyes ( $\muύωψ$ , short-sighted) rather than from  $\muείον$ , less.

We will conclude our notice by an extract which must, we think, be taken as a specimen of unconscious humour.

*Sub nomine*, Plaster of Paris (Vol. II., p. 93) we read:—"Besides its uses in surgery and for making casts, which do not come within the scope of this work, plaster of Paris applied in paste to a tumour, for example, sometimes acts well as a placebo in the case of an ignorant and timid

patient. The process of taking a cast of the tumour is apt to be interpreted by such a person as a therapeutic procedure, and may cheer and sustain him during the few days for which it may be wise to postpone a surgical operation"!!

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*A Manual of Hygiene for Students and Nurses.* Illustrated by Seventy Drawings. By JOHN GLAISTER, M.D., D.P.H. Camb.; Fellow of the Faculty of Physicians and Surgeons of Glasgow; L.R.C.P. & S. Edin.; Professor of Forensic Medicine and Public Health, &c., &c. London: The Scientific Press (Ltd.). 1897.

DOCTOR GLAISTER has produced an excellent text-book of hygiene for nurses and students. Its 300 pages contain all the essentials of the science told in a clear and agreeable manner.

Commencing with the hygiene of the house the author passes to the consideration of the sick room, and from that to the questions of ventilation and heating of rooms, the temperature of the body, baths, water supply, the detection of impurities in water, and so forth.

Although the qualitative examination of water is a simple matter, nevertheless it requires some knowledge of chemistry, and as nurses are taught nothing of chemistry we fail to see what use such reading can be for them, and we consider it too elementary for a student who has taken a course of practical chemistry.

Chapter XVIII., on Personal Cleanliness, has our warm approval of its insistence on the necessity of cleanliness, and we quite agree that the observance of the Mosaic sanitary code has done much to preserve the health of the Jews. When the writer was saying a good word for the Talmud he forgot, perhaps unconsciously, the strict injunctions of the Koran for cleanliness. We are inclined to think that the personal cleanliness of the Jew and Moslem intensified the filthy habits of the early saints and mediæval Christians.

Less than a page disposes of "Occupational Habits," much too short a space in which to deal with such an important subject.

Writing on "Exercise—Rest—Relaxation," the author says—"Holidays ought to form a part of the scheme of life of every man." We heartily endorse this, and specially commend it to city men. No organ more needs a period of absolute rest than the brain, and the ill effects of denying the needed rest is too often the cause of emotional insanity and suicide. "Effects of Occupation on Health" is an admirable chapter, and well repays reading.

The remaining chapters are fully equal to those referred to, but space does not allow of them being singly dealt with. But the reader who desires information on the newest designs in water-closets and sewage pipes, and such like literature, which seems to fascinate some sanitary authorities, will find much reading matter in Dr. Glaister's book.

As the title of the book states it is intended for students and nurses, and, as we have stated above, it is an excellent text-book; but we cannot approve the opening sentence of the Preface, which assigns all the credit for Preventive Medicine to the Victorian era. The author goes so far as to state that sixty years ago there was "general ignorance of the causes which make for disease," and adds, "then the nation was passively careless of the housing and surroundings of the poorer classes;" and of epidemics he writes that "they were deemed to be visitations of God."

He thus writes of the home of Reginald Scot, whose "Discoverie of Witchcraft" was published in 1584. Of course, some portions of the Book of Common Prayer may be quoted to support the idea, but the whole current of thought of the sixteenth, seventeenth, and eighteenth centuries, and first half of the present century, was directed to the study of natural causes for supernatural seemings, and no country in Europe gave so much thought to the social condition of the poor.

All classes in England bore part in the good work. Whilst the population of England was largely rural, large commons were found attached to each village, and as early as the fourteenth century (Boket writing in 1167: "Black was his cope above his curtel white blanket") the home manufacture of woollen goods made the labourer independent of field labour. The worsted trade spread over the eastern

counties from Norwich, and the western counties attained to Continental celebrity for "West of England broad-cloth." In 1534 it was reported to Parliament that "divers persons dwelling in hamlets, thorps, and villages of the country make all manner of cloths."

In the days of Elizabeth the increase of national wealth—in commerce, manufacture, and agriculture—produced important changes in the mode of living. The standard of comfort became higher; food became more wholesome; as agriculture improved and animals could be kept through the winter with greater ease, salt meat and salt fish no longer formed the staple food of the lower classes for half the year. Brick-making had been discovered about the year 1450, and by the time of the good Queen Bess the wooden or wattled houses had generally been replaced with buildings of brick and stone. The introduction of chimneys and the lavish use of glass had helped to improve the people's dwellings; carpets had superseded the old filthy flooring of rushes; pillows and cushions were found in all decent houses; and the quantity of carved wood work showed that men cared for something more than mere utility in their dwellings. Nor were the poor neglected. The 43rd of Elizabeth, which is the basis of our Poor-law system, enjoined that vagabonds be forced to work; and each town and parish was held responsible for the relief of its indigent and disabled poor, as well as for the employment of its able-bodied mendicants. The church alms were to be devoted, as heretofore, to the relief and employment of the poor, and power was given to the mayor of each town, and the churchwardens of each country parish, to assess all the inhabitants able to contribute to the relief of the poor, and to enforce, if necessary, its payment by imprisonment. By the Act of 1572 the justices of country districts and the mayors of towns were directed to register the impotent poor, to settle them in fitting habitations, and to assess all inhabitants for their support. The poor were not collected in barracks but provided with cottages, where they were regularly supplied with wool, flax, hemp, or other material for manufacture. Houses of correction were built for obstinate vagabonds and paupers who refused to work. And last, but not least, the children of the poor were appren-

ticed to handicrafts; improved methods of agriculture were taught, and much of the surplus labour which was flung off the land was thus recalled.

With this improvement diseases incidental to want and filth lessened; sweating sickness, black death, and leprosy disappeared from the land.

The discovery of the New World stimulated a spirit of adventure. Englishmen followed the Spaniard across the Atlantic, and rounded the Cape of Good Hope with the Portuguese. Long voyages in small, badly-equipped vessels bred scurvy at sea, just as the Crusades bred it on land, when, in 1218, a badly furnished army of Crusaders attempted the Siege of Damietta. Did the English look on the disease as a visitation? Nothing of the sort. Again and again they sought to find a cause, and finally J. Lind published his treatise on scurvy, "containing an inquiry into the nature, causes, and cure of that disease—1753."

Jenner never looked upon variola as a visitation from God; neither did John Hunter when consulted by Jenner on the prophylactic properties of cowpock.

Percival Pott, finding that epithelioma of the forearm resulted from the soot-bag lying over the gardener's arm, never imagined that he was interfering with the course of Providence. Tuke never dreamt that he was doing other than holy work when he commenced the humane treatment of insanity. Graves plainly stated that typhus fever was the outcome of want and dirt. Malaria has disappeared in England because of the great sanitary work of draining the fens, and as far back as 1795 Dr. Fothergil urged a systematic cleansing of the public streets.

With the introduction of steam and improved machinery, helped by the destruction of all industry on the Continent by Napoleon's armies, the manufacturing industries were enormously increased. The rural population flocked into the towns; the labour of children became valuable; the greed of gold got hold of the manufacturers; children worked in relays—excessive work. No proper sanitary conditions existed for the thousands of immigrants, no more than they exist in Klondyke.

But were the people indifferent?

Two Acts were passed. One in 1833, known as Lord Shaftesbury's, prohibited night work to persons under eighteen years of age in both cotton, wool, and other factories; children from nine to thirteen years of age were not to work more than forty-eight hours a week; and young persons from thirteen to eighteen were to work only sixty-eight hours. Provisions were also made for the children's attendance at school, and for the appointment of factory inspectors.

It is unnecessary to multiply examples; sufficient has been told to show that at each period of the history of the country attempts were made to grapple with each evil as it came forward. In the past our predecessors did splendid sanitary work—they stamped out variola, malaria, scurvy, chimney sweeps' cancer, ergotism, London carbuncle, sweating sickness, plague and famine fever.

It is very doubtful if the succeeding generation can place so many good works to our credit. To belittle the past that our present labour may appear great is not alone ridiculous, it is unjust.

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*Handbook of Health and Hygiene.* By JOHN E. DOWLING, M.D. Dublin: M. H. Gill & Son. 1897. Pp. 116.

THIS is a capital little book, written by the sanitary officer of an Irish rural sanitary district, and intended to teach some of the leading facts of hygiene to those visiting the dwellings of the poor. It deals with the usual subjects of such manuals—air, water, drainage, food, the house, disinfectants, and personal hygiene; it also has a useful chapter on accidents and emergencies. It ought to find its way into the hands of doctors, clergy, and other workers in rural districts.

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*Archives of the Roentgen Rays.* Edited by W. S. HEDLEY, M.D., and SYDNEY ROWLAND, M.A., M.R.C.S. London: The Rebman Publishing Company, Limited. November, 1897. Folio. Pp. 17. Vol. II. No. 2.

THE number of the Archives for November, 1897, is particularly interesting because of the address of the President of the Roentgen Society, Professor Silvanus Thompson,

F.R.S., which it contains. This very able statement relative to the discovery and use of the Roentgen ray was delivered on November 5 before the newly-constituted Roentgen Society. We take the liberty of quoting the first two paragraphs of the President's address *in extenso*, as they contain so graphic an account of the now celebrated X-rays.

"November the eighth, 1895, will ever be memorable in the history of science. On that day a light which, so far as human observation goes, never was on land or sea, was first observed. The observer, Prof. Wilhelm Conrad Roentgen. The place, the Institute of Physics in the University of Würzburg, in Bavaria. What he saw with his own eyes, a faint flickering greenish illumination upon a bit of cardboard, painted over with a fluorescent chemical preparation. Upon the faintly luminous surface a line of dark shadow. All this in a carefully darkened room, from which every known kind of ray had been scrupulously excluded. In that room a Crookes's tube, stimulated internally by sparks from an induction coil, but carefully covered by a shield of black cardboard, impervious to every known kind of light, even the most intense. Yet in the darkness, expressly arranged so as to allow the eye to watch for luminous phenomena, nothing visible until the hitherto unrecognised rays, emanating from the Crookes's tube and penetrating the cardboard shield, fell upon the luminescent screen, thus revealing their existence and making darkness visible.

"From seeing the illumination by the invisible rays of a fluorescent screen, and the line of shadow across it, the work of tracing back that shadow to the object which caused it, and of verifying the source of the rays to be the Crookes's tube, was to the practised investigator but the work of a few minutes. The invisible rays—for they were invisible save when they fell upon the chemically-painted screen—were found to have a penetrative power hitherto unimagined. They penetrated cardboard, wood, and cloth with ease. They would even go through a thick plank, or a book of 2,000 pages, lighting up the screen placed on the other side. But metals, such as copper, iron, lead, silver, and gold were less penetrable, the densest of them being practically opaque. Strangest of all, while flesh was very transparent, bones were fairly opaque. And so the discoverer, interposing his hand between the source of the rays and his bit of luminescent cardboard, *saw* the bones of his living hand projected in silhouette upon the screen. The great discovery was made."



The President points out in a subsequent part of his excellent address that even Roentgen's discovery may be said not to have escaped the prescience of Shakespeare. We may almost adopt as a prevision of it Hamlet's words to his Queen-mother—

“ You shall not budge ;  
You go not till I set you up a glass  
Where you may see the inmost part of you.\* ”

The remaining contents of this part of the Archives are a paper by Mr. Ernest Payne, M.A., on the localisation and measurement of hidden bodies by the aid of Roentgen rays; notices of new books on the subject of the rays; descriptions of the plates (five in number); and “Notes.”

*Radiography in Marine Zoology. The British Echinodermata.*  
By R. NORRIS WOLFENDEN, M.D. Cantab. London:  
The Rebman Publishing Company, Limited. 1897. Folio.  
Pp. 6.

THIS paper has been issued as a supplement to the November number of the “Archives of the Roentgen Ray.” The letter-press is illustrated with thirty-six radiographs distributed in fifteen plates. These are highly artistic productions, and testify in a very living way to the practical bearing of radiography upon scientific research.

Having collected a large number of specimens in the course of marine dredging in the Orkney seas during the summer of 1896 and 1897, it occurred to Dr. Wolfenden to submit many of them to the X-rays, with the idea of determining how far the new method might assist in the study of marine zoology. The plates reproduced in illustration of his paper represent only a few of the specimens, chiefly belonging to the order “Echinodermata.” In one instance a considerable help was given in discriminating between too closely allied species—viz., *Asterias Rubens*, and *Asterias Murrayi*. A ten-inch spark coil was used, and the exposures were from one to three minutes in duration. Experiments in progress show the author that, by the injection of the animals, he is

\* *Hamlet*, Act III., Sc. 4.



able to photograph the circulatory and digestive systems *in situ*.

The plates are exquisitely finished.

*Bath as a Health Resort.* Published by the Bath Corporation. 1897.

THE object of this sketch-book, which is issued by the Baths Committee of the Corporation of Bath, is a twofold one. First, it aims at making more widely known the medicinal virtues of the celebrated hot springs, and the completeness of the modern bathing establishments. Secondly, it seeks (and not in vain) to convey to the reader some idea of the residential attractions and advantages of the City of Bath, and it voices the historic interest attaching to a locality in which the remarkable remains of the Roman occupation are so wonderfully preserved.

The immediate occasion for the publication of the sketch-book was the opening on Saint Luke's Day, October 18, 1897, by H. R. H. the Duke of Cambridge, K.G., of the Grand Pump Room Annexe and Roman Promenade. These are attached to the famous hot mineral springs, and have been completed at a cost of nearly thirty thousand pounds sterling.

The sketch-book is beautifully illustrated, and gives a full account of the system now pursued in the *établissement* at Bath.

*Fevers and Infectious Diseases : their Nursing and Practical Management.* By WILLIAM HARDING, M.D. Ed., M.R.C.P. Lond. London: The Scientific Press. 1897. Burdett Series—No. 4. Demy 8vo. Pp. 88.

WE have read these pages with great pleasure, appreciating the clear and practical instruction so skilfully condensed for the use of nurses, to whom it should prove a valuable text-book, both in private and district work. The mode of onset of the various fevers is sketched, and directions for carrying out the prescribed treatment given in detail, with many useful hints on general nursing—hot and cold packs, vapour baths, &c.—when hospital appliances and supervision are no

longer at hand. Complications which may occur in the course of the several diseases treated of are pointed out, with their premonitory symptoms, and the value of a concise and intelligent report for the doctor is insisted upon. Simple, definite directions are given for isolation, disinfection, and the care necessary during convalescence. We were sorry to miss any mention of the value of red curtains and blinds in the instructions given for mitigating the destructive effects of small-pox.

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*Diet Chart and Alimentary Index.* Suggested by M. J. KENNY, L.R.C.P. Ed. Bristol: John Wright & Co. 1897.

THESE charts contain a list of articles of diet, and the recommended articles are to be marked and the charts torn out and given to the patient. The idea is a good one, but the articles are badly grouped; thus, the first seven entries under the head of sundries are—arrowroot, beef-tea, butter (fresh), eggs, chicken broth, honey, mutton broth. It would be much better to put beef-tea, mutton broth, and chicken broth together in a group, and then either the whole group or one of its parts could be ticked off. On the back of the charts are directions how to make some invalid foods, but the methods are not good ones—for example, beef-tea is to be boiled for twenty minutes, and the flavour of extract of beef is to be improved by adding Liebig's extract. There is also an alimentary index of the foods suitable in various diseases.

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*Burdett's Official Nursing Directory, 1898: containing an outline of the principal laws affecting Nurses, particulars of Nurse Training Schools in the United Kingdom and Abroad, Nursing Institutions, &c., and a Directory of Nurses.* Compiled and edited, with the assistance of a small Committee of Medical Men and Matrons, by SIR HENRY BURDETT, K.C.B. London: The Scientific Press. 1898. 8vo. Pp. 599.

WE welcome the Official Nursing Directory from such a source, and wish it a wide circulation, followed by appreciation and co-operation from heads of institutions and

nurses. The arrangement of the contents is excellent, and handy for reference. It should be found on the table of every nursing institution and club in the kingdom.

The work is evidently not known in Ireland, for we have in vain searched through its pages for the names of some of our best known and most highly educated nurses. This is a pity, because it is, of course, as a work of reference, that the book has a claim upon our consideration.

*The Life-Saving Society : Illustrated Handbook of Instruction.*

Diamond Jubilee Edition. London. 1897. Pp. 101.

THIS capital little handbook gives not only directions for saving from drowning and for resuscitation of those drawn out of the water, but also an excellent land drill, intended to teach how the rescuer may release himself from the grip of a drowning person. The numerous illustrations of drill, artificial respiration, &c., are all half-tone photo-blocks, and are much in advance of the diagrams that appear in most manuals. Every school ought to affiliate with the Life-Saving Society, and detached classes might well be formed in our medical schools.

*The Edinburgh Medical Journal.* Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New Series. Vol. II. Edinburgh and London : Young J. Pentland. 1897. 8vo. Pp. 638.

THIS handsome volume, like its predecessor, is full of interesting and valuable matter. The "Original Communications" are many and on various topics. Dr. Byrom Bramwell contributes a course of lectures on aphasia; Dr. Osler writes on the hepatic complications of typhoid fever; Mr. G. A. Berry on the treatment of common eye affections; Professor Thomas R. Fraser, F.R.S., on paroxysmal hæmoglobinuria; and our own fellow-citizen, Dr. Thomas Myles, on nephrectomy and nephrolithotomy. These are only a few examples of the high standard which the editor has been fortunate enough to secure. The publishers have done their work thoroughly well, so that the *Edinburgh Medical Journal* can hold its own as one of the best among British and Foreign medical periodicals.

## PART III.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### ROYAL ACADEMY OF MEDICINE IN IRELAND.

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President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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#### SECTION OF MEDICINE.

President—SIR GEORGE F. DUFFEY, M.D., President of the Royal  
College of Physicians of Ireland.

Sectional Secretary—DR. R. TRAVERS SMITH.

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*Friday, November 19, 1897.*

The PRESIDENT in the Chair.

*Pneumonia : a Multiple Infection.*

DR. J. W. MOORE read a paper on the above subject. [It will be found at page 47.]

MR. HENRY CROLY said he had for many years been familiar with pneumonia as a complication of erysipelas, which he ventured to call "*erysipelas of the lung*." In these cases there were none of the ordinary symptoms of pneumonia present; but on examination of the lungs he found in several cases solidification with the usual dulness, bronchial breathing, bronchophony, &c. He had been acquainted with the disease for twenty-four years.

DR. J. W. MOORE, replying, said that there was one point which he would like to repeat, as he thought he had been misunderstood—he had not said that in very few cases of pneumonia was Friedlander's micro-organism present. That was not what he had intended to convey; but he had intended to convey that in influenzal pneumonia the specific organism of pneumonia was not often present. It was the *Streptococcus pyogenes*.

*Pityriasis Rubra (with Living Specimen).*

DR. J. B. COLEMAN read a paper on the above subject. [It will be found at page 25.]

DR. WALLACE BEATTY said the diagnosis between the two varieties of pityriasis rubra—that was, the variety which began acutely with red spots and rapidly became general, and the variety preceded by an eczema or lichen—could be made out only by the clinical history. When one saw a universal case of pityriasis rubra which had succeeded an eczema or psoriasis, the appearances of such a case were precisely similar to the appearances in Dr. Coleman's case, so that it just came to be a question whether to call this case pityriasis rubra, when the case is acute and not preceded by any other skin disease, and whether to call the other cases general psoriasis or general lichen. He was inclined to look on pityriasis as a condition which might be primary or which might be secondary to some other skin affection. He described a few cases of skin disease last year, one of which presented all the characters of pityriasis rubra in the beginning; however, the course since shows that it is a case of pemphigus foliaceus. Looking at Dr. Coleman's case for the first time one might think that it was a case of generalised seborrhœa, but the history must show that it was a case of pityriasis rubra.

DR. FINNY said that the case did not conform typically to many of the described symptoms of the disease, and it was hard to say to what group it belonged, except to the class of pityriasis rubra. There were in this case symptoms which he had not seen in any case of pityriasis rubra—namely, great thickening of the scalp, with a great quantity of scales, and with alopecia. These symptoms were absent in the only two cases he had ever seen. Also, the scales in those cases were very much larger than those in Dr. Coleman's case. This fact made one look on the case as one in which scaling was taking place after universal erythema. It struck him that in taking up the skin of the patient's arms and legs it felt extremely tight and hard, and the skin did not seem to him to be the soft skin which is found in pityriasis rubra, but over the tibia it could not be moved at all, and one might think it was eczema with dried exudation. The patient himself said he was itchy and had to scratch himself, and he (Dr. Finny) thought that this was one of the peculiarities wanting in pityriasis rubra, as there was generally no itching at all.

THE SECRETARY (DR. R. TRAVERS SMITH), said that he should like to support Dr. Coleman when he said that the disease was

much better marked a few days ago when he (Dr. Smith) had seen the patient. The scales were then much more abundant, and the erythema was more intense, especially over the arms and anterior surface of the chest. He asked what Dr. Coleman thought was the significance of the leucocytosis in the case, as he believed it had not been demonstrated in a case of pityriasis before.

DR. KNOTT said he had seen a case of pityriasis rubra. The patient was an old man, eighty years of age, and the one symptom that he complained of was sleeplessness, due chiefly to the itching, although not violent itching.

DR. COLEMAN, replying, said he agreed with Dr. Beatty in saying that secondary cases of pityriasis rubra or dermatitis exfoliacea were indistinguishable clinically, except for their history, from a case such as he had brought forward, but he thought that a distinction might be made on account of the relatively better prognosis of the cases which are secondary to eczema, for instance. As regards Dr. Finny's remarks as to the seborrhœa of the patient's head, he (Dr. Coleman) thought that some seborrhœa always existed in pityriasis rubra. Neither some thickening of the skin nor itching was sufficient to upset the diagnosis of pityriasis rubra; in fact, in some of the very chronic cases a considerable amount of thickening of the skin had been found. Itching had also been noticed in cases now and then as a prominent symptom, although not a common symptom. With regard to Dr. Travers Smith's question about the leucocytosis, he (Dr. Coleman) presumed that in this case it was simply due to the inflammatory condition of the skin. Neusser had found an increased proportion of eosinophiles in a number of skin diseases. He (Dr. Coleman) had found such a condition in a case of pemphigus recently. In reply to Dr. Knott, it was, he thought, fairly true that other skin diseases are not so universally distributed as pityriasis rubra, although there are cases undoubtedly secondary to pityriasis rubra and pemphigus which are just as universal as the case which he exhibited.

The Section then adjourned.

**SANITARY AND METEOROLOGICAL NOTES.**

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ;  
F.R.C.P.I. ; F. R. Met. Soc. ;  
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

**VITAL STATISTICS**

*For four weeks ending Saturday, December 4, 1897.*

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Nov. 13	Nov. 20	Nov. 27	Dec. 4		Nov. 13	Nov. 20	Nov. 27	Dec. 4
Armagh -	28·0	7·0	35·1	14·0	Lisburn -	8·5	4·3	4·3	21·3
Ballymena	16·9	33·8	22·5	5·6	Londonderry	28·3	28·3	23·6	15·7
Belfast -	22·2	20·6	22·8	26·3	Lurgan -	4·6	13·7	9·1	22·8
Carrickfergus	5·8	11·7	23·4	11·7	Newry -	8·1	20·1	12·1	4·0
Clonmel -	24·4	4·9	0·0	14·6	Newtownards	17·0	11·3	39·7	39·7
Cork -	22·1	15·9	20·1	20·8	Portadown	12·4	43·3	18·6	18·6
Drogheda -	26·6	30·4	38·0	7·6	Queenstown	0·0	0·0	5·7	28·7
Dublin -	19·4	23·1	24·9	24·5	Sligo -	15·2	25·4	20·3	25·4
Dundalk -	12·6	4·2	29·3	4·2	Tralee -	22·4	11·2	11·2	16·8
Galway -	15·1	11·3	26·4	7·6	Waterford	19·9	6·0	21·9	21·9
Kilkenny -	23·6	9·4	4·7	14·2	Wexford -	27·1	22·6	27·1	18·1
Limerick -	15·4	26·7	15·4	19·6					

In the week ending Saturday, November 13, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 19·4), was equal to an average annual death-rate of 19·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·1 per 1,000. In Glasgow the rate was 21·4. In Edinburgh it was 19·0.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 19·9 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in seventeen of the districts to 6·0 in Waterford—the 10 deaths from all causes registered in that district comprising 1 from whooping-cough and 2 from diarrhoea. Among the 120 deaths from all causes registered in Belfast are 3 from whooping-cough, 1 from diphtheria, 5 from enteric fever, and 3 from diarrhoea. The 32 deaths in Cork comprise 1 from each of the following—whooping-cough, enteric fever, and diarrhoea.

In the Dublin Registration District the registered births amounted to 165—75 boys and 90 girls; and the registered deaths to 133—61 males and 72 females.

The deaths, which are 40 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 19·8 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 19·4 per 1,000. During the first forty-five weeks of the current year, the death-rate averaged 29·5, and was 2·9 over the mean rate in the corresponding period of the ten years 1887–1896.

Twenty-nine deaths from zymotic diseases were registered, being 7 over the average for the corresponding week of the last ten years, and 15 over the number for the previous week. They comprise 8 from scarlet fever (scarlatina), 2 from influenza and its complications, 2 from whooping-cough, 1 from diphtheria, 1 from ill-defined fever, 9 from enteric fever, and 3 from diarrhoea.

The decline in the number of cases of scarlatina admitted to hospital, noted in the return for the previous week, has not continued, the admissions amounting to 32, 15 in excess of the number for the preceding week. Twenty-three scarlatina patients were discharged, 3 died, and 148 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Bencavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Forty-four cases of enteric fever were admitted to hospital, being 1 over the admissions in the preceding week, and 18 in excess of the number for the week ended October 30. Twenty-five patients were discharged, 3 died, and 182 remained under treatment on Saturday, being 16 over the number in hospital on that day week.



The number of deaths from diseases of the respiratory system registered is 23, being 14 below the average for the corresponding week of the last ten years and 10 under the number for the previous week. The 23 deaths comprise 11 from bronchitis, 7 from pneumonia, and 2 from croup.

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In the week ending Saturday, November 20, the mortality in thirty-three large English towns, including London (in which the rate was 18·9), was equal to an average annual death-rate of 18·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·5 per 1,000. In both Glasgow and Edinburgh the rate was also 18·5.

The average annual death-rate in the twenty-three principal town districts of Ireland was 20·3 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in sixteen of the districts to 5·6 in Ballymena—the 6 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 111 deaths from all causes registered in Belfast are 1 from scarlatina, 2 from whooping-cough, 2 from diphtheria, 5 from enteric fever, and 4 from diarrhoea.

In the Dublin Registration District the registered births amounted to 163—82 boys and 81 girls; and the registered deaths to 156—80 males and 76 females.

The deaths, which are 23 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·3 in every 1,000 of the population. Omitting the death of one person admitted to hospital from without the district, the rate was 23·1 per 1,000. During the forty-six weeks of the current year, ending with Saturday, November 20, the death-rate averaged 29·3, and was 2·7 over the mean rate in the corresponding period of the ten years 1887–1896.

Only 12 deaths from zymotic diseases were registered, being 7 below the average for the corresponding week of the last ten years, and 17 under the number for the preceding week. They comprise 1 from scarlet fever (scarlatina), 1 from diphtheria, 6 from enteric fever, 1 (in the Richmond District Lunatic Asylum) from beri-beri, and 2 from diarrhoea.

Thirty-eight cases of scarlatina were admitted to hospital, being 6 over the admissions in the preceding week. Twenty-one scarlatina

patients were discharged, and 165 remained under treatment on Saturday, being 17 over the number in hospital on that day week. There were, besides, 24 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital fell to 29. Twenty patients were discharged, 2 died, and 189 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

The hospital admissions included, also, 2 cases of typhus. One typhus patient was discharged, 1 died, and 2 remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system rose to 35, but this number is 4 under the average for the corresponding week of the last ten years. The 35 deaths comprise 26 from bronchitis and 5 from pneumonia.

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In the week ending Saturday, November 27, the mortality in thirty-three large English towns, including London (in which the rate was 21·0), was equal to an average annual death-rate of 20·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·5 per 1,000. In Glasgow the rate was 19·1, and in Edinburgh it was 20·1.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 22·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·1 per 1,000, the rates varying from 0·0 in sixteen of the districts to 11·4 in Drogheda—the 10 deaths from all causes registered in that district comprising 2 from scarlatina and 1 from whooping-cough. Among the 123 deaths from all causes registered in Belfast are 2 from measles, 2 from whooping-cough, 7 from enteric fever, and 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 219—118 boys and 101 girls; and the registered deaths to 170—92 males and 78 females.

The deaths, which are 9 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·4 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 24·9 per 1,000. During the forty-seven weeks of the current year, ending with Saturday, November 27, the death-rate averaged 29·2, and was

2·6 over the mean rate in the corresponding period of the ten years 1887-1896.

Twenty-five deaths from zymotic diseases were registered, being 4 in excess of the average for the corresponding week of the last ten years, and 13 over the low number in the previous week. They comprise 1 from varicella (chicken-pox), 3 from scarlet fever (scarlatina), 1 from influenza, one from whooping-cough, 12 from enteric fever, one (in the Richmond District Lunatic Asylum) from beri-beri, 1 from cholera infantum, and 4 from diarrhoea.

Thirty-nine cases of scarlatina were admitted to hospital, being 1 over the admissions in the preceding week. Thirty-four scarlatina patients were discharged, 1 died, and 169 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week. This number does not include 22 convalescents at Beneavin.

The number of cases of enteric fever admitted to hospital declined to 23. Twenty enteric fever patients were discharged, 7 died, and 185 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 31, being 10 below the average for the corresponding week of the last ten years, and 4 under the number for the previous week. The 31 deaths comprise 19 from bronchitis and 10 from pneumonia.

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In the week ending Saturday, December 4, the mortality in thirty-three large English towns, including London (in which the rate was 20·1), was equal to an average annual death-rate of 19·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·6 per 1,000. In Glasgow the rate was 19·3, and in Edinburgh it was 20·8.

The average annual death-rate in the twenty-three principal town districts of Ireland was 22·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in seventeen of the districts to 5·8 in Carrickfergus—1 of the 2 deaths from all causes registered in that district having been caused by enteric fever. Among the 142 deaths from all causes registered in Belfast are 1 from measles, 10 from enteric fever, and 2 from diarrhoea. The 11 deaths in Waterford comprise 1 from typhus and 1 from diarrhoea. The Registrar for Tralee No. 2 District remarks—"Scarlatina very prevalent in the district, also whooping-cough."

In the Dublin Registration District the registered births amounted to 205—122 boys and 83 girls; and the registered deaths to 170—78 males and 92 females.

The deaths, which are 14 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·4 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 24·5 per 1,000. During the forty-eight weeks of the current year, ending with Saturday, December 4, the death-rate averaged 29·2, and was 2·6 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 24, being 3 over the average for the corresponding week of the last ten years, but 1 under the number for the previous week. The 24 deaths comprise 3 from scarlet fever (scarlatina), 2 from influenza and its complications, 2 from whooping-cough, 2 from diphtheria, 1 from ill-defined fever, and 11 from enteric fever.

The number of cases of scarlatina admitted to hospital was 36, being 3 under the admissions for the preceding week. Thirty-nine scarlatina patients were discharged, 4 died, and 162 remained under treatment on Saturday, being 7 under the number in hospital at the close of the preceding week. This number is exclusive of 29 convalescents at Beneavin, Glasnevin.

There has been a further decline in the number of cases of enteric fever admitted to hospital, the admissions being 16 only, against 23 in the preceding week, 29 in the week ended November 20, and 44 in the week ended November 13. Twenty-eight patients were discharged, 8 died, and 165 remained under treatment on Saturday, being 20 under the number in hospital on that day week.

Deaths from diseases of the respiratory system rose to 35, but this number is 11 under the average for the corresponding week of the last ten years. The 35 deaths consist of 24 from bronchitis and 11 from pneumonia.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.  $53^{\circ} 20'$  N., Long.  $6^{\circ} 15'$  W., for the Month of November, 1897.*

Mean Height of Barometer, -	-	-	30.127 inches.
Maximal Height of Barometer (on 20th, 9 p.m.),	30.654	„	
Minimal Height of Barometer (on 28th, 3 p.m.),	29.311	„	
Mean Dry-bulb Temperature, -	-	-	$47.8^{\circ}$
Mean Wet-bulb Temperature, -	-	-	$46.3^{\circ}$ .
Mean Dew-point Temperature, -	-	-	$44.6^{\circ}$ .
Mean Elastic Force (Tension) of Aqueous Vapour,	.299	inch.	
Mean Humidity, -	-	-	89.0 per cent.
Highest Temperature in Shade (on 12th),	-	-	$60.9^{\circ}$ .
Lowest Temperature in Shade (on 15th),	-	-	$34.0^{\circ}$ .
Lowest Temperature on Grass (Radiation) (on 15th),	-	-	$31.0^{\circ}$ .
Mean Amount of Cloud, -	-	-	70.2 per cent.
Rainfall (on 14 days), -	-	-	3.422 inches.
Greatest Daily Rainfall (on 13th), -	-	-	.937 inch.
General Directions of Wind, -	-	-	W.S.W. & S.E.

*Remarks.*

A dull, mild, foggy month on the whole, but winter burst upon the N.W. of Europe in a violent storm on the 28th and 29th, the barometer falling to 28.43 inches at Fanö, in Denmark, on the morning of the latter day. In Dublin the mean temperature of the entire month was nearly  $4^{\circ}$  above the average, and that of the week ended Saturday, the 13th, was  $54.1^{\circ}$ .

In Dublin the arithmetical mean temperature ( $48.6^{\circ}$ ) was decidedly above the average ( $44.7^{\circ}$ ); the mean dry bulb readings at 9 a.m. and 9 p.m. were  $47.8^{\circ}$ . In the thirty-two years ending with 1896, November was coldest in 1878 (M. T. =  $38.2^{\circ}$ ), and in 1870 (M. T. =  $42.2^{\circ}$ ), warmest in 1881 (M. T. =  $50.8^{\circ}$ ).

The mean height of the barometer was 30.127 inches, or 0.267 inch above the corrected average value for November—namely, 29.860 inches. The mercury rose to 30.654 inches at 9 p.m. of the 20th, and fell to 29.311 inches at 3 p.m. of the 28th. The observed range of atmospheric pressure was, therefore, 1.343 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was  $47.8^{\circ}$ , or  $3.3^{\circ}$  below the value for October, and  $5.2^{\circ}$  below that for September, 1897. The arithmetical mean of the maximal and minimal readings

was  $48.6^{\circ}$ , compared with a twenty-five years' average of  $44.7^{\circ}$ . On the 12th the thermometer in the screen rose to  $60.9^{\circ}$ —wind, S.W.; on the 15th the temperature fell to  $34.0^{\circ}$ —wind, N.N.W. The minimum on the grass was  $31.0^{\circ}$ , also on the 15th.

The rainfall was 3.422 inches, distributed over 14 days—the rainfall was much above, while the rainy days were considerably below, the average. The average rainfall for November in the twenty-five years, 1865–89, inclusive, was 2.452 inches, and the average number of rainy days was 17.0. In 1888, 6.459 inches fell on 26 days. On the other hand, the rainfall in 1896 was only .664 inch on 9 days. In 1895, 3.582 inches fell on 21 days.

High winds were noted on 11 days, but attained the force of a gale on only one occasion—the 28th. The atmosphere was more or less foggy in Dublin on the 1st, 2nd, 5th, 10th, 11th, 13th, 21st, 22nd, 23rd, 24th, and 25th. Lunar halos were seen on the 8th and 29th. Hail, sleet, and snow fell in the gale of the 28th, when also lightning was seen.

Throughout the period ended Saturday, the 6th, anticyclonic conditions held in the British Isles and Central Europe. Only in the far North on the one hand and over the Peninsula on the other was there a cyclonic distribution of atmospheric pressure with its attendant high winds and rains. The centre of highest barometer lay over the North Sea, the South of Scandinavia and Denmark until Friday morning; when a very shallow depression formed over the North Sea. During the earlier days of the week the air was soft and genial, there was a good deal of bright sunshine, and high temperatures for the time of year were recorded in the daytime. After Wednesday the sky remained densely clouded, and the diurnal range of temperature was small, the thermometer scarcely rising by day, and not falling much by night, owing to the interference with terrestrial radiation by the clouds. During the whole period the area of greatest cold was located over Germany, France and Belgium, and in that region the isotherm of  $30^{\circ}$  F. was found at 8 a.m. on and after Wednesday. At the hour named on Thursday the thermometer read  $47^{\circ}$  at Bodø in Norway (lat.  $67^{\circ}$  N.) and only  $26^{\circ}$  in Paris and  $27^{\circ}$  at Munich. In Dublin the barometer rose to 30.395 inches at 9 a.m. of Saturday (wind, E.S.E.), having fallen to 30.214 inches at 9 p.m. of Wednesday (wind, S.E.). The extreme range of pressure, therefore, amounted to only 0.181 inch. On Tuesday the screened thermometers rose to  $59.3^{\circ}$ ; on Wednesday they fell to  $42.0^{\circ}$ . Easterly winds prevailed throughout, except for a few hours on Friday, when there was a light north-westerly breeze. The period was rainless.

The week ended Saturday, the 13th, proved the warmest week which had been observed in November for very many years. It was, however, by no means so dry as its predecessor, for rain fell freely on Monday and Friday in Dublin, while much heavier downpours were reported from the S., centre, and W. of Ireland on several days. Until Friday the centre of a large anticyclone was found overlying the south of Scandinavia, Denmark and the Baltic. At 8 a.m. of Wednesday, the barometer read 30·84 inches at Wisby in the Baltic. A tendency to cyclonic conditions was observed on Sunday in Ireland, and local irregularities in atmospheric pressure over Western Europe generally on Monday and Tuesday caused considerable rainfalls in many places. The isobars afterwards became regular and anticyclonic with improving weather; but on and after Thursday the barometer gave way quickly in the west, so that squally southerly winds, high temperatures, and rainfalls took the place of the quiet, dull and foggy weather which had been prevalent, particularly in England. In that country a sudden chill occurred on Wednesday night, the screened thermometers falling to 29° at Cambridge, 32° at Loughborough, and 33° in London and at Oxford. An equally sudden rise of temperature took place early on Friday morning. This last-named day turned out phenomenally warm in Ireland and in Scotland, the thermometer rising to 61° in Dublin and to 60° at Leith and Nairn. In Dublin the mean atmospheric pressure was 29·928 inches, the barometer rising to 30·212 inches at 9 p.m. of Tuesday (wind S.S.E.) and falling to 29·390 inches at 9 p.m. of Friday (wind, S.W.). The mean temperature was 54·1°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 53·5°. The screened thermometers fell to 46·9° on Monday and rose to 60·9° on Friday. The rainfall was 1·335 inches on five days, ·937 inch being registered on Saturday. The prevailing winds were S.S.E. and S.W.

Mildness was again the predominant characteristic of the weather of the week ended Saturday, the 20th, but a "cold snap" of some intensity occurred on Sunday and Monday. A rainstorm prevailed on the east coast of Ireland during the opening hours of the week. It was brought about in connection with a sudden reversal of wind direction and temperature conditions in Scotland and Ireland. At 8 a.m. of Sunday a long curved tongue of low atmospheric pressure stretched from the Bay of Biscay up the Irish Sea and across the South of Scotland to the S.W. of Norway. To the eastward of this curious trough of low barometer, southerly winds and high temperatures prevailed; to the westward, northerly winds, cold rains and sleet, and low temperatures. By



9 a.m. of Monday the thermometer was down to  $34^{\circ}$  in Dublin, where a reading of  $61^{\circ}$  had been recorded three days before. A ridge of high pressure now passed quickly eastward across the British Isles, leaving gradients for S.W. winds re-established on Tuesday and Wednesday. Both these days proved dull and rainy in Dublin. On Thursday morning a lofty stratum of cirriform cloud cleared off from S.W. and a fine, bright day ensued. Fine, mild weather afterwards lasted to the end, anticyclonic conditions being fully established on Saturday. At 6 p.m. of Friday the barometer was down to 28.73 inches at Bodø in Norway. In Dublin the mean height of the barometer was 30.193 inches, atmospheric pressure ranging from 29.522 inches at 9 a.m. of Sunday (wind, N.N.W.) to 30.654 inches at 9 p.m. of Saturday (wind, E.?). The mean temperature was  $47.7^{\circ}$ . The mean of the dry bulb readings at 9 a.m. and 9 p.m. was  $47.0^{\circ}$ . The screened thermometers fell to  $34.0^{\circ}$  on Monday and rose to  $57.7^{\circ}$  on Wednesday. The rainfall amounted to .696 inch on three days, .522 inch being recorded on Wednesday. The prevailing winds were N.W. and W.S.W.

Dull, foggy, changeable weather ruled during the greater part of the week ended Saturday, the 27th. The general distribution of atmospheric pressure was cyclonic in the North of Europe, anticyclonic in the British Isles and Central Europe. During the first two days a large depression swept eastward across Scandinavia, while the isobar of 30.7 inches lay over the S.E. of England and Germany. On Tuesday the barometer rose in the former, but fell in the latter regions, thus tending to equalise pressure. Much fog prevailed from time to time, and the changes in temperature were sudden and extreme, the thermometer falling fast when the sky cleared, only to rise again as clouds formed. On Thursday morning a shallow depression was found over the mouth of the English Channel. This disturbance caused gloomy wet weather in Ireland, South Wales, and the extreme S.W. of England. A very heavy fall of rain occurred also in Brittany and at Biarritz. The depression quickly filled up, and the anticyclone formed again over England and Germany, so that a rapid decrease of temperature occurred on Thursday night, frost of some intensity being reported on Friday morning, even in London ( $28^{\circ}$ ). Meanwhile sudden alternations in pressure off the N.W. of Ireland caused squally S.W. winds, high temperatures and rains in this country. In Dublin the mean height of the barometer was 30.365 inches, pressure ranging from 30.649 inches at 9 p.m. of Sunday (wind calm) to 29.919 inches at 9 a.m. of Saturday (wind, W.N.W.) The mean temperature was  $46.1^{\circ}$ . The mean dry bulb reading at 9



a.m. and 9 p.m. was  $45\cdot4^{\circ}$ . The screened thermometers fell to  $37\cdot9^{\circ}$  on Tuesday and rose to  $54\cdot8^{\circ}$  in the early morning hours of Saturday. The rainfall was  $\cdot520$  inch on three days,  $\cdot236$  inch being registered on Friday.

The last three days of the month were rough, cold, and unsettled. On Sunday, the 28th, a deep depression travelled southeastwards across the North Sea, becoming deeper as it approached the Continent. It caused violent gales in Ireland at first, and on the 29th in England and on the Continent. Temperature fell fast as the wind veered towards N. in the rear of the storm centre. Lightning and squalls of hail, sleet, and snow were reported from many places on the night of Sunday, the 28th. The 29th was fine and bright in Dublin, but a heavy rainfall ( $\cdot610$  inch) occurred on the 30th.

The rainfall in Dublin during the eleven months ending November 30th amounted to  $27\cdot503$  inches on 193 days, compared with  $15\cdot378$  inches on 141 days during the same period in 1887,  $27\cdot298$  inches on 167 days in 1895,  $22\cdot716$  inches on 174 days in 1896, and a twenty-five years' average of  $25\cdot292$  inches on  $177\cdot4$  days,

At Knockdolian, Greystones, Co. Wicklow, the rainfall in November was  $5\cdot455$  inches, distributed over 17 days. Of this quantity  $2\cdot200$  inches fell on the 13th. From January 1st, 1897, up to November 30th, rain fell at that station on 188 days, and to the total amount of  $38\cdot185$  inches. The corresponding figures for 1893 were  $19\cdot586$  inches on 150 days; for 1894,  $35\cdot716$  inches on 168 days; for 1895,  $31\cdot715$  inches on 151 days; and for 1896,  $28\cdot642$  inches on 147 days.

At Cloneevin, Killiney, Co. Dublin,  $3\cdot45$  inches of rain fell on 15 days, compared with a twelve years' average of  $2\cdot698$  inches on 17·0 days. The maximal fall in 24 hours was  $1\cdot38$  inches on the 13th. Since January 1st, 1897,  $28\cdot64$  inches of rain have fallen at this station on 184 days. The corresponding figures for 1896 were  $26\cdot31$  inches on 159 days.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in November was  $4\cdot864$  inches, distributed over 15 days. The maximal fall in 24 hours was  $1\cdot950$  inches on the 13th. Since January 1, 1897, the rainfall at Newcastle has amounted to  $35\cdot528$  inches on 172 days. On November 8th the screened thermometers at the National Hospital rose to  $58^{\circ}$ , on the 16th they fell to  $34^{\circ}$ .

## MEDICAL VISITING LISTS FOR 1898.

SMITH'S PHYSICIANS' AND SURGEONS' VISITING LIST FOR 1898.

MESSRS. HAZELL, WATSON AND VINEY, LTD., Medical Stationers, of 52 Long Acre, London, W.C., have published in good time this old-established and popular medical visiting list. This is the fifty-second year of publication. As usual, there are several editions. For convenience and completeness we have no hesitation in recommending the edition, No. 1A. It has space for twenty-five patients, with a "Journal." Bound in morocco tuck, with pocket and pencil, it costs four shillings and sixpence. The size of this edition permits of its being carried in the breast pocket of a frock coat. It is extremely neat, and abounds with valuable information—professional and general.

WELLCOME'S MEDICAL DIARY AND VISITING LIST FOR 1898.

MESSRS. BURROUGHS, WELLCOME AND CO., of Snow Hill Buildings, London, E.C., have surpassed all their previous literary efforts in the preparation of this pocket-book. Several improvements, suggested by members of the profession, have been made in this edition. The medico-legal information it contains has been revised and amplified. Diet tables have been carefully drawn up, and will be found at page 201. The Therapeutic Notes, Index of Diseases and Remedies, and Tables have also undergone a thorough revision. There is a particularly full and clear account of serum-therapy in the "Therapeutic Notes." Taking it all in all, this book is a little pocket library in itself, full of all kinds of medical and general information.

## NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

### *Chemical Food "Tabloid" (Phosphates Compound).*

THIS "tabloid" overcomes all the objections which have been raised to the syrup or fluid form of this valuable combination of the phosphates of iron, calcium, potassium and sodium. There is no difficulty in securing its administration regularly and without objection on the part of young or sensitive patients who cannot or will not take fluid medicines. The dosage can be regulated with exactness and without fear of error, since each "tabloid" contains an accurately adjusted quantity of each of its ingredients. "Tabloid" Chemical Food is easily taken because of its small size and sugar-coating. It is suited for continued administration by reason of its portability and compactness, and because it is well borne by those suffering from sensitive digestive organs. It is of special value for children suffering from anæmia, rickets, and for such as are thin and pale without apparent cause, and it has been advocated for continued administration during the period of second dentition. A marked advantage possessed by "Tabloid" Chemical Food over similar combinations in fluid form is that it does not stain the teeth. "Tabloid" Chemical Food (Phosphates Compound) is supplied by Messrs. Burroughs, Wellcome & Co., in two sizes— $2\frac{1}{2}$  gr. and 5 gr.—representing  $\frac{1}{2}$  and 1 drachm of a standard compound syrup of phosphate of iron. Each size is supplied, sugar-coated, in bottles of 25 and 100.

### *Ballardvale Lithia Spring Water.*

WE have received a large number of bottles of lithia water, obtained from the Ballardvale Lithia Springs, near Lowell, Massachusetts. We consider it a very good lithia water. Sir Charles A. Cameron, M.D., who has, at our request, made an exhaustive analysis of the specimens, of which a considerable quantity was employed in the investigation, has submitted the following report on this interesting natural mineral water:—

"The water was almost completely colourless. Heated to  $100^{\circ}$  no peculiar odour was noticed. On standing for twenty-four hours there was no perceptible sediment. Under the microscope no organisms of the larger kind were visible, and bacteriological cultivation developed a very small number of micro-organisms, much smaller than are commonly met with in the great majority of potable waters. No poisonous metals were detected. One imperial gallon of the natural lithia water contains in grammes—

" Bicarbonate of lithia (hydrogen lithium carbonate, $\text{LiHCO}_3$ )	-	-	-	-	12.360
" Carbonate of potash (potassium carbonate, $\text{K}_2\text{CO}_3$ )	-	-	-	-	0.142
" Carbonate of soda (sodium carbonate, $\text{Na}_2\text{CO}_3$ )	-	-	-	-	0.184
" Sodium chloride ( $\text{NaCl}$ )	-	-	-	-	0.440
" Carbonate of lime (calcium carbonate, $\text{CaCO}_3$ )	-	-	-	-	0.186
" Carbonate of magnesia (magnesium carbonate, $\text{MgCO}_3$ )	-	-	-	-	0.035
" Oxide of iron (ferrous oxide, $\text{FeO}$ )	-	-	-	-	0.192
" Silica	-	-	-	-	0.640
" Combustible and volatile matter (other than carbonic acid)	-	-	-	-	0.648
[ " Yielding albuminoid ammonia, 0.005 ]					
" Saline ammonia	-	-	-	-	0.004
" Nitrous acid	-	-	-	-	nil.
" Nitric acid	-	-	-	-	trace.
					14.831

" This is a very excellent natural lithia water, and, like all natural mineral waters, is to be preferred to the artificial ones. It is an unusually strong solution of lithia, for in general mere traces of lithia are found in mineral waters."

The address of the Ballardvale Lithia Spring Water Company is 191 Arlington-street, Lawrence, Massachusetts.

#### *Angier's Petroleum Emulsion.*

THE return of the winter season each year increases the demand for remedies of this class, and certainly among those with which we are acquainted none has higher claims upon our consideration than this well-known and popular preparation. Angier's Petroleum Emulsion with Hypophosphites (to give it its full name) is a scientific preparation of purified petroleum combined with the hypophosphites of calcium and sodium. It is a true emulsion, not a soap, the oil being so minutely divided as to favour immediate absorption. Each fluid ounce contains  $33\frac{1}{3}$  per cent. of purified petroleum, and 12 grains of the combined hypophosphites of calcium and sodium. It may be taken after meals in a teaspoonful (or larger) doses either alone or well-stirred into wine, water, milk or other vehicle. Children take it readily, and in them it is a valuable food in tubercular affections and in convalescence from acute febrile diseases, or from pulmonary attacks. It is dispensed in 6 oz. and 15 oz. bottles, and may be obtained of all chemists, or from the Angier Chemical Company, Limited, of 32 and 33 Snow Hill, London, E.C.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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FEBRUARY 1, 1898.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. VII.—*The Surgery of the Stomach.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

ASEPTIC surgery can claim no greater triumph than that of having brought hopeless cases of gastric derangement within the range of surgical interference. Antiseptic surgery was quite as fatal to such cases as the ignorant methods of our forefathers; but with the advent of asepticism came comparative safety in dealing with organs long thought to be outside our province.

For much of the success attending on operations on the stomach we are indebted to the anatomists who have of late followed the surgeon into every field where good work is possible; we are also indebted to the more rigorous diagnostic methods to which none of the body cavities are now sacred, and which demand physical evidences of every trouble to be dealt with surgically.

This is the era of exploration. Heretofore assumption was the rule. The uterus, the bladder, the stomach, the kidney, the gall-bladder, the lungs, and even the brain become in turn the field of well-planned and skilfully conducted manœuvres, with the object of obtaining physical proof of derangement. Confining myself now to the stomach, I

would call attention to the more important aids we have for the detection of those affections likely to be benefited by operation. The most generally useful apparatus is the tube with funnel attached, as used by Kussmaul. By passing this

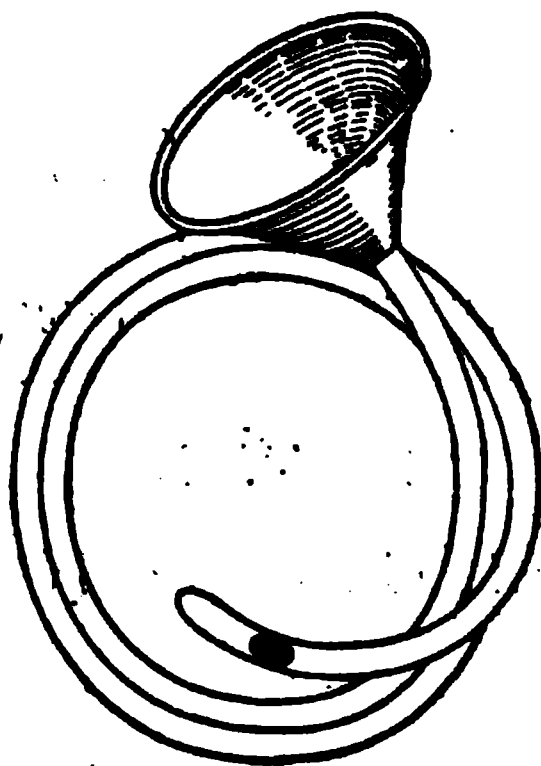


Fig. 1.—Kussmaul's Tube.

tube you get evidence of the character of the gaseous and liquid contents of the stomach, and while washing out with boric or other solution, some notion of the capacity of the stomach can be arrived at by measuring the amount of fluid expelled after filling that viscus by holding the funnel two and a half feet above the level of the cardiac orifice. The extent of dulness may be mapped out on the abdominal wall, and thus some idea may be obtained of the position of the pylorus, the ascertaining of which is of such moment in surgical diagnosis. While the stomach is distended with fluid an intermittent rush through the pyloric orifice can be heard if the phonendoscope be applied to the abdominal wall; this would indicate that the valve was acting properly, while a continuous sound of passing fluid would be evidence of induration of the pyloric end of stomach without stenosis. Again, the absence of all sound and the permanent distension shown by persistent dulness would indicate pyloric obstruction usually organic in character.

An apparatus of less value is the one shown in Fig. 2, for electric illumination of the stomach. For its application a dark room is necessary, and the stomach must be freed from

solid contents or blood by washing out. When this has been done boric fluid or gas must be introduced through the tube A, so as to dilate the stomach. This prevents the heated

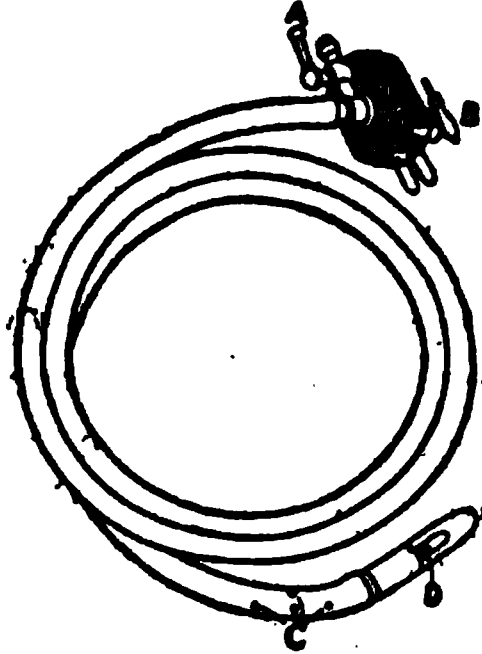


Fig. 2.—Gastroscope.

bulb D from touching the mucous membrane, and if the distension be continued while observing the abdominal wall some idea may be obtained of the extent and position of the organ, and thickening of any density on the anterior aspect may be detected.

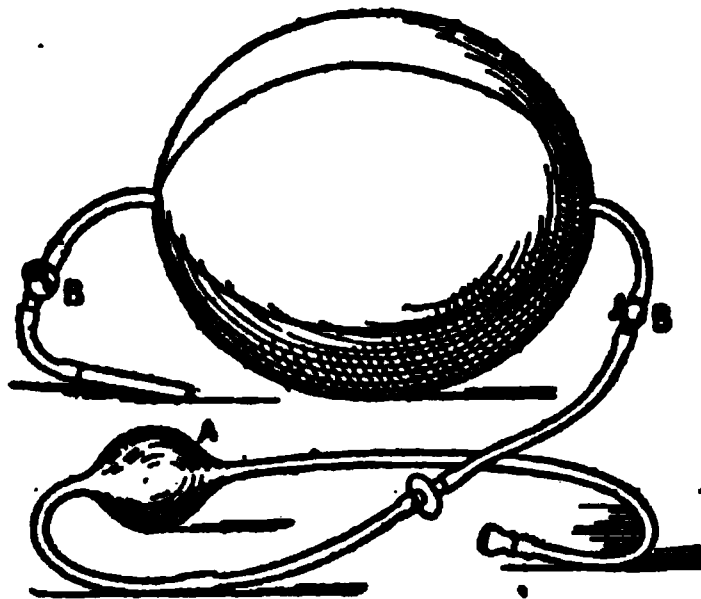


Fig. 3.—Hydrogen Balloon.

Fig. 3 represents an appliance of great value in the diagnosis of pyloric trouble. It is a rubber balloon, capable of exerting a pressure of four pounds to the square inch as a limit. This is filled with hydrogen gas. After washing out the stomach with Kussmaul's tube the nozzle A is passed into the funnel and the gas allowed to pass slowly in. When visible distension of the epigastrium occurs, the phonendo-

scope is placed over the normal position of the pylorus. When the valve is acting an intermittent whistling sound is heard, and variations of epigastric tension are noted. A continuous sound of the same character indicates that the closure of the pylorus is retarded through induration or by bands of adhesion, while the absence of any whistling and continued epigastric distension show that closure of the pylorus is present. The tympanitic note obtained when the stomach is distended with this light gas is very marked, and enables one to outline the organ with great accuracy.

This apparatus is of great value in examining the intestines for tumour, stricture, and perforations, and then Lund's insufflator (Fig. 4) is inserted into the rectum. The air-pad A prevents escape of the gas during the procedure. It is

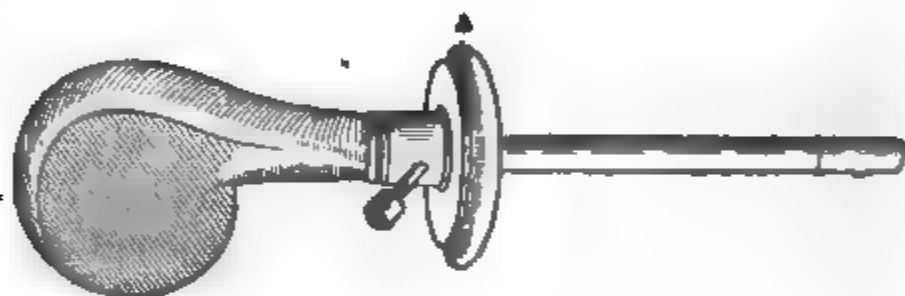


Fig. 4.—Lund's Insufflator.

also useful in searching for the bowel in lumbar and abdominal colotomy. When hydrogen is used in examining for perforation of the stomach or intestines, an aspirating needle is passed through the linea alba. If gas escapes a light is applied, and should there be a perforation a blue flame appears. In the absence of this it may be taken that there is no abnormal opening in the bowel-wall.

Distension of an inflamed or thinned bowel-wall by injecting fluid or air with a Higginson syringe is very dangerous, since one can never determine the pressure excited on the bowel by this method, and many fatal cases of rupture of the intestines have occurred through overlooking this fact. A pressure of two to four pounds suffices for all practical purposes, and when this can be measured why apply the crude method of our predecessors?

Gaseous dilatation has four advantages—1st, all the sounds of its passing are much more intense than those of passing



fluid; 2nd, the mapping out of distended organs is easier; 3rd, the time occupied in making an examination is much shorter, owing to the rapidity with which it passes; and 4th, the position of solid masses in front of or bordering on the distended viscera can be readily made out. The dulness of the fluid surrounding or supporting a tumour obscures its outline.

The following cases illustrate the value of these methods of exploration, and prove that even cases *in extremis* may derive much benefit from vigorous surgical interference:—

*Profuse Hæmoptysis; Extensive Ulceration at Pyloric End of Stomach.*

CASE I.—A. F., aged twenty-four years, came under my care at St. Vincent's, when she gave the following history:—For two years she had had vomiting soon after meals—at first without any blood, but for ten months previous to admission there was much blood in the discharges from the stomach. She had been four months in another hospital, where every effort was made to check this hæmorrhage by medicines, and then laparotomy was carried out. The stomach being examined through an incision near the pylorus much blood was found in the stomach, but no effort was made to deal with the ulceration which was present. The abdomen was closed, and union by granulation took place, leaving a great scar in the middle line. Hæmatemesis continuing she came under my care, and on washing out the stomach I found that free acid was present in fair amount, and that bleeding was induced by every insertion of the douche tube. Distension with gas proved that the stomach was greatly dilated, and there was a long-continued whistling sound heard, most intense midway between the ensiform cartilage and umbilicus, during the passage of the gas. This sound was distinct in a line to the right and downwards, indicating the passage of gas through a narrow channel. Now and again a sudden rush of gas could be heard over the right semilunar line, showing that the pylorus was acting. I marked out the stomach on the abdominal wall for the class, and selecting Billroth's incision I cut through the rectus abdominis. Thus gaining free entrance to the upper abdomen, I exposed the anterior wall of the stomach. I found the pylorus pushed to the right and lower than usual, extending from a point  $1\frac{1}{2}$  inches to the left of this valve; a small scar extended for 3 inches, puckering the peritoneal coat and narrowing the right end of the stomach as at X, Fig. 5. To the left of this contracted part sacculation had taken place, so that the

stomach projected into the wound. Selecting this prominent part of the organ, I made an incision large enough to admit one half of a medium-sized Murphy's button, the other half I inserted in the

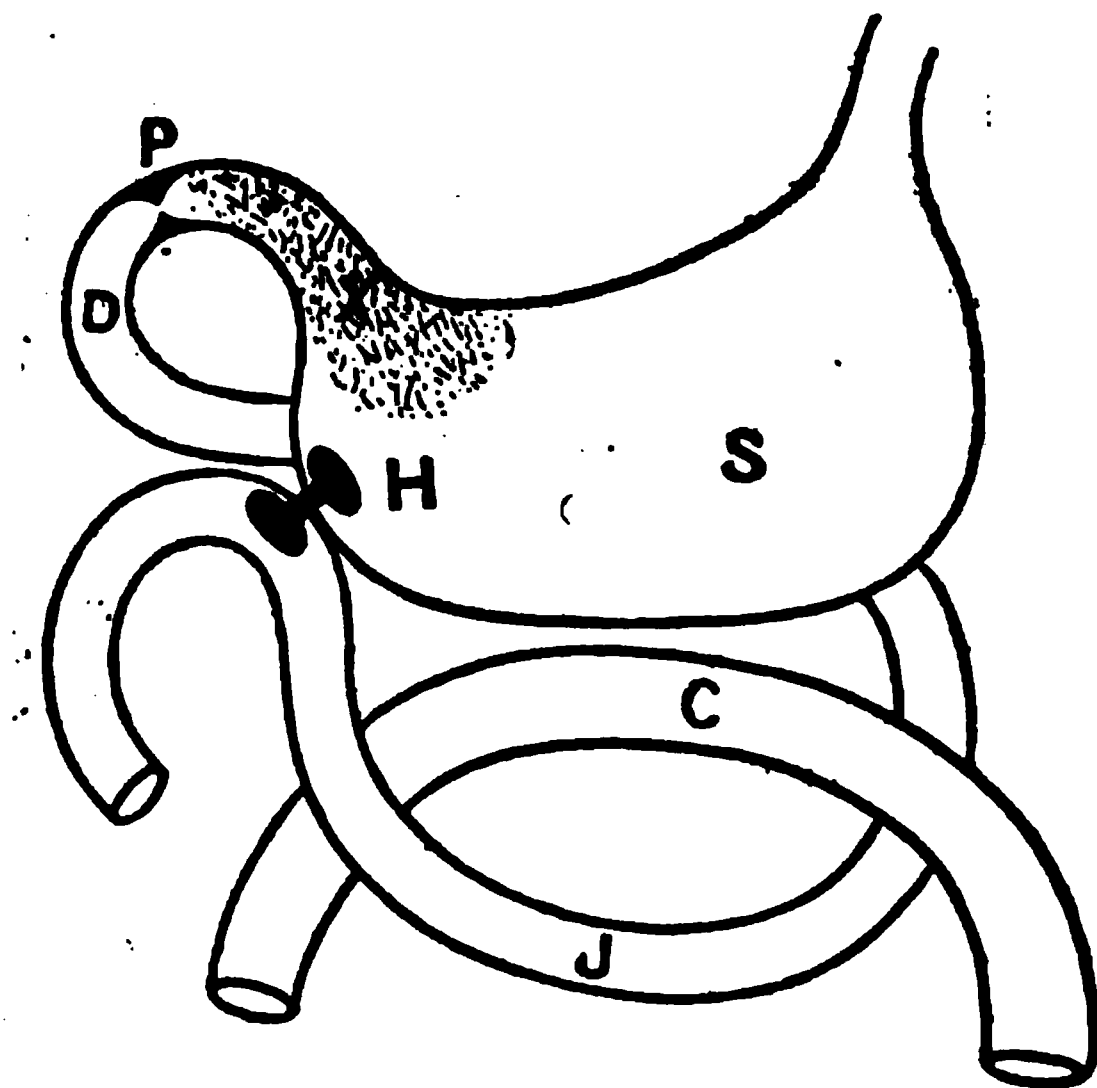


Fig. 5.

P, pylorus; S, stomach; D, duodenum; J, jejunum; C, transverse colon; H, Murphy's button; X, scar tissue.

jejunum as shown in the figure, thus ensuring the passage of food through a large portion of the stomach, but allowing its escape without coming in contact with the diseased part.

Owing to the low vitality of the patient the first few days after operation were anxious, and dark blood was noticed in the motions, but no vomiting of blood occurred then or since, and the patient made an uninterrupted recovery. The only distress she had was that at times a regurgitation of bile took place owing to the position of the new opening.

She can take even the coarsest food without pain resulting, and there has never been the slightest trace of hæmorrhage from the stomach or the bowels since the first few days after gastro-enterostomy was carried out.

*Persistent Vomiting; Ulceration along Lesser Curvature.*

CASE II.—The next case to which I wish to refer is that of D. C., aged twenty-six years. He was sent to me by Dr. Walsh,

of Mallow, who, on account of rapid emaciation from persistent vomiting, thought there was little hope for his life.

He had small, weak pulse, constant vomiting after the slightest amount of food, and he was constantly cold and clammy. Nutrient enemata were tried, but without much result. Gaseous distension proved that the stomach was much distended, and the pylorus constricted. I carried an incision from the left costal arch at the eighth cartilage downwards, and to the right, midway between ensiform and umbilicus to end, at right semilunar line. On exposing the stomach I found it dilated, as depicted in Fig. 6. Along the

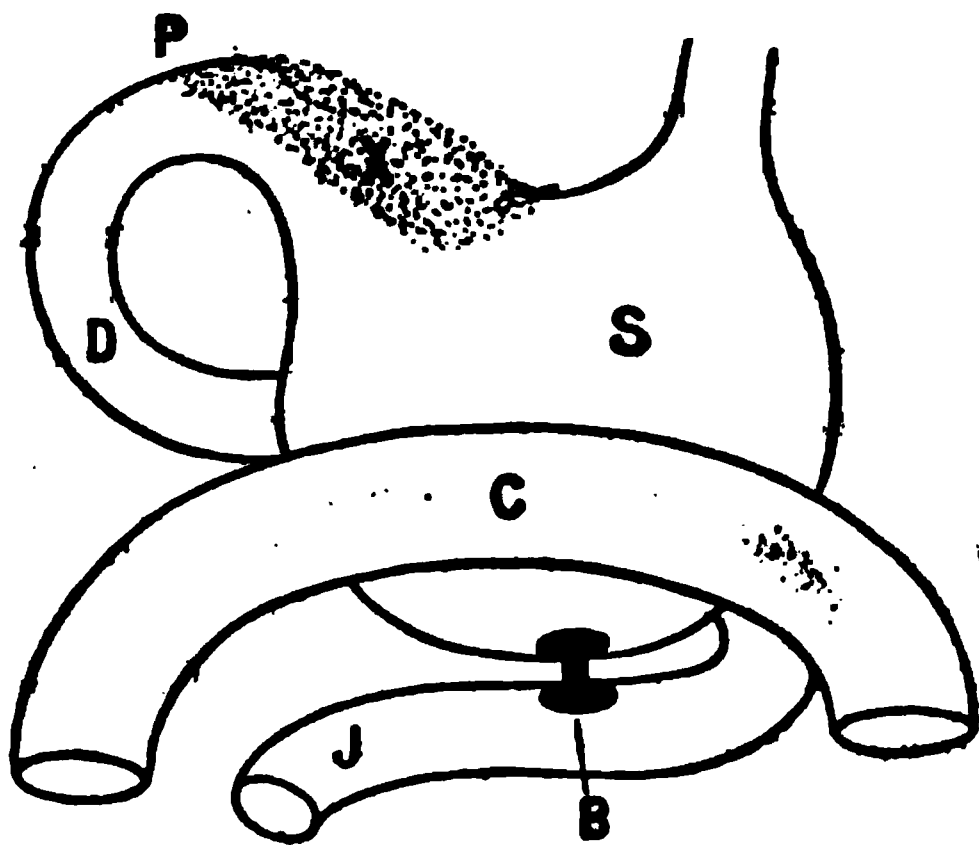


Fig. 6.

P, Pylorus ; S, stomach ; D, duodenum ; J, jejunum ; C, transverse colon ;  
B, Murphy's button ; X, scar tissue.

lesser curve, as at X, there was a thickening, over which the serous coat was puckered into folds. The slightest touch on this part caused a marked contraction of the entire stomach.

In this case I determined on carrying out an operation which would not be followed by regurgitation of the contents of the duodenum. Selecting the proper spot in the transverse meso-colon, I made an opening large enough to allow a fixation of the posterior wall of the stomach (S) to the first part of the jejunum, as shown in Fig. 6. The operation was a rapid one, and notwithstanding the weakness of the patient, he soon rallied. Three days after operation liquid food was allowed; four days later solids. The abdominal wound was soundly healed on the eighth day, and since that time he has rapidly gained in weight.

These cases I have exhibited at the Surgical Section of the Royal Academy of Medicine in Ireland, both looking the picture of health.

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**ART. VIII.—On Two Cases of Tetanus Successfully Treated with Antitoxin.\*** By ROBERT GLASGOW PATTESON, M.B. Univ. Dubl.; Fellow and Examiner in Surgery, Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County Dublin Infirmary.

IN introducing to you what amounts to a discussion on the subject of the treatment of tetanus, it is not my intention to trespass at any length on your patience. The treatment of acute infective processes by means of serum injections is still so far in its infancy that but little is definitely known as to the ultimate results obtainable, and therefore every contribution to the subject has its merits enhanced by the uncertainty that surrounds the issue. The theory on which the treatment is based is familiar to you all; and as my object in bringing these cases before you is to elicit information from the experience of others, and not to ventilate any crude opinions of my own, I shall deal with them as briefly as possible.

**CASE I.**—N. C., aged fourteen, was admitted to the Meath Hospital on 13th August, 1896, having been sent in by Dr. Davy as a case of incipient tetanus. The following history was elicited:—About twelve days previously he had trodden on a thorn, which entered the web between the first and second toes of his right foot. The thorn was removed, and no pain or trouble was experienced until after the expiration of a week, when a small sinus opened between the two toes on the inner aspect of the second, and commenced to discharge a thin serous fluid. This spot was slightly tender. Four days later—that is, eleven days after the receipt of the injury—he noticed his jaws beginning to stiffen, and complained of vague pains in his back. On admission trismus was well marked—the power of separating the teeth being limited to half an inch; he could not eat, but could take large quantities of liquid nourishment. The abdomen was hard, the neck muscles stiff, so that he carried

\* Read before the Surgical Section of the Royal Academy of Medicine in Ireland on Friday, December 10, 1897. [For discussion on this paper, see page 155.]

his head awkwardly. Temperature  $98.8^{\circ}$ ; pulse normal. No spasms had hitherto occurred. He was placed in a ward by himself, and a special nurse appointed. He slept fairly well during the early part of the night, but at 6 a.m. the following morning a severe clonic spasm with intense pain developed. When I saw him later on the rigidity was well marked, the head retracted, the back arched, the abdomen tense as a board, while the recti stood out on either side like the muscles of a gladiator. *Risus sardonicus* was typically present. Any effort to speak caused spasm of the facial muscles, and barely the tip of the tongue could be protruded between the teeth. Fifteen grains of dried serum—the only kind immediately available—were injected into the muscles of the back, but owing to its insolubility a large proportion of this failed to pass through the syringe. A well-marked spasm occurred at the time, and the boy was evidently in great pain. Subsequently a supply of the liquid serum, prepared at the Pasteur Institute, was obtained through Messrs. Fannin, and this form alone was afterwards employed in both cases. The serum is put up in flasks, each containing 10 c.cm., which is the dose for a single injection. The wound in the foot was carefully examined. Some of the serum was dried on cover-glasses and stained for bacilli, but with negative results. After careful and thorough disinfection the wound healed slowly and without incident. Two further injections were given—one at 4 p.m., and one at 8 p.m. The evening temperature was normal. In addition to the antitoxin, a drachm of chloral and a drachm of potassium bromide, divided into four doses, were given during the night. Thirteen spasms, varying in severity, occurred during the same period, the greater number between 11 p.m. and 2 a.m. He slept well in the intervals and perspired profusely.

The next day, and indeed throughout the remainder of his illness, the pulse and temperature remained normal, nor was there much dyspnoea during the spasms. Three injections of serum (80 c.cm. in all) were given during the day, and three doses of the bromide and chloral during the night. He had eight spasms, none of marked severity, and passed, on the whole, a good night. The following day, Sunday, 16th, three injections were also given and the bromide and chloral discontinued. He had six spasms before 2 a.m., the last of marked severity, the end of the tongue being almost bitten through. After 3 a.m. he slept well. Briefly summarised, the rest of the history is as follows:—

17th.—Three injections as before; fourteen spasms at intervals during the night.

## 106 *Tetanus Successfully Treated with Antitoxin.*

18th.—Two injections during the day; some slight spasms; twelve spasms during the night.

19th.—Two injections; trismus less pronounced; can protrude the tongue a little; three spasms during the day and nine during the night.

20th.—Two injections given. Was able to-day to eat a little bread and butter. Three slight spasms during the day, and one severe spasm during the night; slept well.

21st.—Two injections. All the symptoms show improvement; the rigidity is much less, and the spasms less frequent and less severe—only three during the twenty-four hours.

22nd.—Two injections; had a good day, but had nine slight spasms during the night.

23rd.—No injection given; six slight spasms during the night.

24th.—Three injections given, as the spasms had been increasing in frequency; one very slight spasm during the night.

After this date no more injections of serum were given. In all twenty-three had been administered. The following night he had two very slight spasms.

On the night of the 26th—the second night after stopping the injections—the spasms recurred, seven in number, and potassium bromide was again resorted to. Two nights later one very slight spasm occurred, but after that convalescence was uninterrupted and rapid. He was allowed up on the 30th of August, seventeen days after admission. For a couple of days afterwards any sudden shock or noise would bring on a slight spasm, lasting only a few seconds. A few days later he was sent home perfectly well.

CASE II.—J. K., aged nineteen, a gardener, was admitted to the Meath Hospital on the 11th of August, 1897. He gave the following history:—About a fortnight previously he got a fall off a cart, injuring his right knee. The skin was broken and it did not heal up, although he was not prevented from following his usual occupation. A few days ago he noticed the muscles of his neck becoming stiff, and found that he could not masticate freely, and as these symptoms were gradually increasing he sought relief at the hospital.

On admission he presented well-marked rigidity of the spinal muscles, cervical and dorsal. The back was arched, the head thrown back, the abdominal muscles rigid and prominent, the risus sardonicus was pronounced, and only the tip of the tongue could be protruded between the teeth. His temperature was  $101.8^{\circ}$ ; pulse 80. Spasms were tolerably frequent but not severe. The patient

was isolated, and an injection of 10 c.cm. of serum was given at noon, and again at 5 p.m. He was able to take fair quantities of beef-tea and milk, and slept well during the night. The following morning the temperature had fallen to  $99^{\circ}$ , the pulse was quieter—64—but the spasms had been frequent and trismus was more marked. Three injections were given during the day. The arching of the back and the abdominal rigidity were more marked. The evening temperature was  $100.6^{\circ}$ ; pulse 64. The spasms were less marked in intensity during the night, and he slept at intervals. In the morning the temperature was normal. The wound on the knee, which had previously been carefully cleansed, was now thoroughly cauterised with pure carbolic acid, the eschar involving a considerable area of the healthy tissues around. There was no discharge from the wound.

On the 18th—the third day after admission—only two injections were given, as the supply had run out. He continued to take large quantities of nourishment, as, although the teeth were tightly clenched, he was able to swallow fluids freely through some existing gaps. During the twenty-four hours he took  $2\frac{1}{2}$  pints of milk, 2 pints of beef-tea, and an egg beaten up. On the following day—the 14th—three injections were given, and his condition in every way showed signs of improvement. The trismus was less marked, the spasms were diminishing in frequency and in intensity, and he was altogether brighter and more cheerful.

On the 15th only one injection was given.

On the 16th—the sixth day after admission—his temperature rose to  $101.6^{\circ}$ . Serum was administered, and the whole surface of the body was sponged. The temperature rapidly fell to  $100^{\circ}$ . A second injection was given in the afternoon, and another in the evening—11 30 p.m.—at which hour his temperature was normal. He passed a good night, and the following morning showed signs of decided improvement: the rigidity was much less, the spasms slighter, and occurring only at rare intervals, and the tongue could be protruded for about half an inch between the teeth. From this date his condition daily improved, and no further injections were given. He had got in all thirteen injections, which, as in the previous case, were administered deeply into the muscles of the back and the gluteal region, and in no instance gave rise to any local or constitutional reaction.

On the 23rd—twelve days after admission—he was sent to the Convalescent Home, and after a fortnight spent there was able to resume his employment in perfect health.

Such, in brief outline, is the essential history of these two cases. I am quite aware that they are open to the obvious criticism that they belong to the type of tetanus which would recover if left to the *vis medicatrix Naturæ* alone. I can only answer—I have seen cases of tetanus with no more pronounced symptoms rapidly run to a fatal termination; and one is not justified in standing idly by while a remedy full of promise lies ready at hand.

Whether the future will justify our hopes can only be estimated by the conscientious record of every case, and it is in the desire to help this end that I lay these before you. At any rate, in this direction of serum therapeutics lies at present all our hope of combating some of the most terrible infective ills that humanity can ever suffer from.

ART. IX.—*A Case of Syphilitic Encephalopathy.*<sup>a</sup> By  
W. R. DAWSON, M.D., Assistant Medical Superintendent,  
Farnham House Private Asylum, &c.

THE delimitation of the area occupied by the disease or group of diseases commonly designated General Paralysis of the Insane is a problem which is receiving an increasing amount of attention.<sup>b</sup> Its difficulty lies in the fact that neither clinically nor anatomically is the boundary line between this and a number of other diseases in any way distinct. Especially is this true of the clinical aspect, for, however characteristic a typical case may appear, there can be no question that the percentage of such cases is now relatively small, at least as regards the earlier stages of the disease, and that in the majority of instances the diagnosis presents varying degrees of difficulty in consequence of the more or less atypical nature of the symptoms. On the other hand, there is a well-recognised class of cases, mostly of a toxic character, which may exhibit a group of symptoms almost, if not quite, indistinguishable from those of the graver malady, from which they can

<sup>a</sup> Read before the Medical Section of the Royal Academy of Medicine in Ireland, December 17, 1897.

<sup>b</sup> Cf. Discussion opened by Binswanger at the Twelfth International Congress, Moscow.



sometimes be distinguished only by a prolonged observation of their course. But of these there is one which presents much greater difficulties than any of the others, inasmuch as its ætiology and incidence are identical with those of general paralysis, while the physical and mental phenomena may bear the strongest possible resemblance. I allude to tertiary syphilitic disease of the central nervous system. It is mainly as a case in point that I have thought it worth while to bring the following under your notice, although there are not wanting, as I think, other points of interest in it:—

**CASE.**—A gentleman, forty-five years of age, married, was admitted to Farnham House on February 23rd, 1897. His history, ascertained at various times subsequently, is as follows:—He comes of an aristocratic family, more than one member of which has risen to eminence—his grandfather, for example, held a very high ecclesiastical position—though he himself was merely a minor official in a small provincial town. His mother's sister was insane, and both parents had been addicted to alcohol. The patient is stated to have been very clever and intelligent, with an excellent memory and a taste for reading, and one of the best officials of his class in Ireland. He had, however, always been peculiar, and was boastful, exaggerative, headstrong, and given to extravagance in money matters, believing that he was destined one day to become rich. He never worked hard. There is a tradition that he suffered from sunstroke in boyhood, and he bears the marks of various accidents in the form of scars and the like. He himself admitted having had syphilis many years ago, though his relatives believed him to have lived a most moral life. This was, however, doubtless true since his marriage, about twenty years back, of which there are several living children, the eldest about seventeen. For the past fifteen years he has been a heavy drinker, except at intervals, and his alcoholism culminated a few years ago in an attack of *delirium tremens*, since when it is stated that he “has never been the same man.” Fits and paralysis are denied by the relative from whom most of the history was obtained, but the patient stated that he had had some sort of “stroke” about six years ago, followed by right-sided paresis, including right ptosis. (I give this for what it may be worth.) He was, however, undoubtedly under treatment in January, 1891, at the National Eye and Ear Infirmary for ptosis and paralysis of accommodation of the right eye only, at which

time he was also suffering from general tremor. The symptoms were ascribed to alcohol and tobacco, in both of which he had been indulging to excess, and after three weeks' treatment with iodide of potassium, combined with abstinence from alcohol and nicotine, his eye was nearly well, and his general state much improved. There is absolutely no history of severe headache. Diplopia, especially when looking at things obliquely, is said to have been occasionally present before his admission, but he did not remember that it had occurred subsequently. He became insane for the first time in the middle of February—i.e., just prior to his admission.

He was a tall, florid, loosely-built man, with reddish hair and grey eyes, in good bodily condition though not stout, and of a rather weak type of face. His most prominent symptom, which obtruded itself immediately, was a general exaltation of mind, manifested partly in his elated look and expansive manner, and in an excess of good-fellowship, but especially in numerous grandiose delusions. Thus he was always announcing that he had "made his pile," had an estate of 8,000 acres and was going to buy another of the same size, had several sailing yachts and a steam-yacht (the latter, however, being—as he added, *more Hibernico*—worked by electricity), and horses which had won several important races, ridden by himself, and similar instances of his wealth and prowess. He would invite all and sundry to accompany him on yachting-trips or tours on which he was always on the point of starting, and was going to make the fortune of various persons to whom he took a fancy. Withal there was a certain mental weakness perceptible, and he was extremely facile. His memory, however, though certainly impaired in some degree, seemed upon the whole fair, at all events for less recent occurrences, though it was hard to disentangle truth from falsehood in his reminiscences. He answered questions readily. On one occasion only was there a suspicion of a hallucination of hearing.

On the physical side the following were observed during the early part of his residence at Farnham House:—The face was somewhat flattened by partial obliteration of the naso-labial folds, and there was right ptosis. Both pupils were irregular and eccentric, the right being smaller than the left, which was of medium size. Instillation of atropin, at a later date, enlarged both moderately and rendered them equal, but did not abolish the irregularity of outline. Both pupils failed to respond to light, directly or consensually, and to sensory stimulation; both contracted on accommodation, but the left very sluggishly. Accommodation itself was not tested, but

there seems to have been difficulty in reading (though this is merely an inference), and that of the right eye was certainly weak, as will be seen subsequently, so that there was probably some paresis. Dimness of vision was complained of, which the patient afterwards compared to seeing things as if through water, but ophthalmoscopic examination failed to reveal any abnormality, unless perhaps the definition of the optic discs may have been somewhat less sharp than usual. Other motor symptoms were some general tremor, slight tremor of the tongue—not at all marked—and slight jerkiness of gait. Speech anomalies were absent. The knee-jerks were greatly increased, but no distinct ankle-clonus was elicited. “Pins and needles” sensations in the feet were complained of. The heart was easily accelerated and weak (the pulse was 128 at the time of the first examination, the temperature being about  $99^{\circ}$ ), and palpitation was complained of, but otherwise the thoracic organs were fairly healthy. There was some chronic irritation of the pharynx and larynx, but the digestive tract seemed fairly healthy, except that appetite was at first poor. The bowels were stated to be regular. The liver, however, was enlarged, projecting about  $1\frac{1}{2}$  or 2 inches below the costal margin, and was rather tender, while some pain was complained of below the right scapula. The urine showed no trace of albumen, and was normal in colour, odour, and reaction. On the skin of the legs and lower part of the back a rupia-like eruption was visible, and there was a slight reddish rash in the centre of the chest. A small scar on the dorsum of the penis was stated by the patient to be the result of a chancre.

At first sight the symptoms and history seemed unmistakably to indicate general paralysis. But although many of the phenomena of this disease were undoubtedly present—in the character of the delusions and general mental attitude, the pupillary anomalies, the exaggerated knee-reflexes, and the flattening of the face, for example—some of the most important, such as, above all, speech abnormalities, as well as pronounced tremor of the tongue, were conspicuous by their absence. Moreover, further observation of the mental state showed that even the delusions were not so utterly childish, or so inconsistent one with another, as is usual in general paralysis; that the patient showed some ingenuity in reconciling them; and that the degree of mental weakness was disproportionately slight as compared with the delusions—in fact, it was early

noted that the patient was fairly reasonable on ordinary matters. As there was also evidence of active syphilis in the skin eruption, it was hoped that the disease might prove to be merely cerebral syphilis; and, accordingly, on March 10th, the administration of iodide of potassium was begun in doses of five grains three times a day, the dose being gradually increased, until at last it reached fifteen grains. No alcohol was given from the time of his admission (in fact, he seemed to have little desire for it), tobacco was limited, and the patient was kept much in the open air.

It may be stated at once that, from the time when the iodide of potassium was administered, improvement was steady and uninterrupted. So far from being inconvenienced by the large doses of the salt, the patient declared that he felt much better while taking it, and both appetite and sleep improved, tremor disappeared, ptosis diminished, the gait became firm, and the skin eruption healed. The mental condition, as might have been anticipated, progressed more slowly, but improvement was soon manifest, and the delusions began gradually to pass away. From continually talking about his wealth, his mansion and demesne, and so forth, he came to speak of them less and less, though, if directly questioned, he would still assert their existence. Towards the end of April, not quite seven weeks from the first dose of iodide, it was noted that "a great deal of his talk now is such as might be that of a sane braggart with a total disregard for truth, and who only half expected his stories to be believed. He even said on one occasion, in a joking way, that he had been telling" one of the other patients "a lot of lies."

It is necessary, however, to deal with the case more in detail, especially as several new symptoms developed in its course.

On March 11th a cramp-like pain was complained of round the abdomen about the level of the transverse colon. On March 25th the gait was stated to be normal, the delusions less in evidence, and spoken of "without any of the usual G.-P. boastfulness and elevation." A few days previously he had complained of having had a "stroke" in the night affecting his right side, but if this was

true the only result was a slight lameness next day. Nothing similar occurred subsequently. On the 31st he declared that he had "rheumatic pains" in various parts of his body. A delusion of suspicion was first expressed on April 3rd, but was speedily forgotten. By this time the rupia had healed, and the liver, though still enlarged, had ceased to be tender. The knee-reflexes remained exaggerated. The condition of the pupils was examined on April 20th, and found to be practically unaltered, but sight was stated to be improved. There was some unsteadiness on closing the eyes with the feet together, the only time this symptom was observed. On April 26th the patient stated that, although there was still some dimness of vision, he could now read small print. On May 6th the pupils were unaltered, but the ptosis was slighter. The face was still rather flattened. The patient stated that he saw better, but that the right eye sometimes became fatigued in reading, compelling him to close it and use the left only. The tongue was steady, the knee-jerks less marked, the right being normal. The liver was reduced in size and not tender, the appetite good, and the bowels acting normally. The heart was still slightly jerky, but the pulse-rate only 84. The temperature was not raised. The only complaint was of muscular pains, and of a pain "like a belt" felt at about the level of the costal margin in the morning, and on sitting still for a time. Mentally he was much improved, and especially when excited spoke quite sanely. He occasionally referred to his delusions, especially if questioned, but seemed less sure of them, and was altogether quieter than formerly. He said that he could only remember in a fragmentary way the first five weeks or so of his residence at Farnham House. On the following day, May 7th, he was, owing to want of means, transferred to a district asylum, to one of the medical officers of which I am indebted for the remaining history of the case.

During the next four weeks his state remained unaltered, the exalted delusions persisting. The iodide was continued, though in smaller (5 gr.) doses. In June, however, the exalted delusions seem to have ceased, and he became very angry against all his friends, especially the relative who had been instrumental in sending him to an asylum. He was constantly demanding his release and writing letters, many of them in a childish manner, and threatening actions at law against anyone who had anything to do with his committal or detention. At the same time he was dull and depressed. There was little alteration during July, but in August, after a visit from his brother, he somewhat suddenly changed for the better, became bright and cheerful, and seemed reconciled to

his friends, saying that he was sure they had all acted for the best. This improvement continued, and he was finally discharged recovered on September 9th. The ptosis had further improved at this time, and the irregularity of the pupils had disappeared about a month prior to his discharge. The last account received of his state has been favourable.

We have here a brain hereditarily weak, and further impaired by the syphilitic virus, by alcohol, and by an attack of *delirium tremens*. Certain ocular symptoms occur, which recover with abstinence and iodide, but some years subsequently, with a syphilitic skin-eruption, there is a return of the ocular symptoms in increased extent, with exaggerated knee-reflexes, various sensory anomalies (muscular and, possibly, girdle-pains, "pins and needles" sensations in the feet), some appearance of muscular weakness (flattening of the face, tremors), cardiac weakness, and enlargement of the liver. With these there is a mental alienation characterised by grandiose delusions, elevation, and some mental weakness. Abstinence and iodide once more prove effective; and, after being an inmate of an asylum for some seven months, the patient has quite recovered mentally, and is physically, at all events, enormously improved.

The result of antisymphilitic treatment, both as regards the tolerance of iodide and the ultimate issue of the case, having thus confirmed the diagnosis, which was at first indeed merely a suggestion,\* there can be little doubt as to the syphilitic nature of the case. Nevertheless, there were two important facts against this view—namely, the existence of grandiose delusions, which are usually said to be rare in insanity due to cerebral syphilis, and the total absence of the severe headaches and insomnia which almost invariably accompany the latter. No argument either way could be drawn from the pupillary phenomena, which would be equally likely to occur in tertiary syphilis or general paralysis; but the ptosis and diplopia would rather indicate the former. Most of the other symptoms might have been caused by general paralysis, by syphilis, or, as I have no

\* As a matter of fact, the case was at first regarded as probably one of general paralysis.

doubt some of them were, by chronic alcoholism. But, on the whole, the evidence was in favour of tertiary syphilis, and the issue of the treatment has settled the question. It therefore only remains to discuss the symptoms and endeavour to draw some conclusion as to the nature and position of the syphilitic lesions.

In the first place, it may be said at once that the total absence of the symptoms of tumour, more especially of headache and optic neuritis, negatives the idea of any bulky or extensive gummatous formation; and, in fact, the former argues against extensive disease of any sort. Now, the cases of cerebral syphilis in which the symptoms resemble those of general paralysis seem to be, as a rule, of two classes—those, namely, in which there is extensive disease of the convexity of the brain, and those in which the vessels are chiefly involved. The former may here be excluded, both for the reasons given above and from the absence of such persistent epileptoid convulsions as are usually caused by disease in this region. Are there any indications that the vessels were affected? If the patient's account of the two fits or "strokes" be accepted, they undoubtedly point in this direction. The first would probably be due to a thrombosis; the second, that which occurred during his residence at Farnham House, would be one of those attacks, lasting only a very brief time, and due to temporary closure of a vessel, which are by no means uncommon in syphilitic brain disease. Too much importance, however, must not be attached to these; but there is an additional argument in the fact that disease of the vessels is most commonly associated with disease at the base of the brain, of which there is here unequivocal evidence. In the first place, the ptosis and, probably, the diplopia indicate implication of the right third nerve or its nucleus, and the pupillary abnormalities show a very complicated lesion in the same locality. Thus there was Argyll Robertson pupil on both sides. This phenomenon indicates an interruption of the special tract somewhere between the retina and the nucleus of the ciliary fibres in the floor of the third ventricle. As sight was not seriously affected, this interruption must have been at some point



after the special fibres have quitted the optic tract, which, according to Henschen,<sup>a</sup> they do by its median root, proceeding towards the superior corpora quadrigemina, where the centre for pupillary contraction to light probably lies. There must, then, have been a nuclear degeneration here, or an interruption of the fibres passing, by what route is uncertain, from thence to the nucleus of the third nerve. In addition to this there was paresis of accommodation of the right eye certainly, and, probably, of the left also, and paralytic mydriasis of the left eye, neither of these being complete. It is almost impossible<sup>b</sup> that even so capricious a disease as syphilis could pick out, in the third nerve, the fibres to the sphincter iridis on one side and the ciliary fibres<sup>c</sup> on one or both, and of the alternatives by far the most probable is that the nuclei were affected. Furthermore, the dilating apparatus of the pupil was also to some extent impaired, as the right pupil was small; neither responded to any sensory stimulation that was tried, and neither was fully dilated a couple of hours after instillation of atropin. The irregularity of the pupils points in the same direction. The sympathetic fibres on the two sides may, of course, have been independently affected, or the cilio-spinal region diseased; but, as the paresis was double and partial, a central lesion seems, on the whole, again to be indicated. The centre for dilatation is placed by Hensen and Völckers<sup>d</sup> just external to the third nerve-nucleus. A somewhat discriminating central lesion, therefore, in the grey matter of the posterior part of the third ventricle and Sylvian aqueduct, would account for all the pupillary phenomena as well as for the ptosis. The dimness of sight, if not entirely due to paresis of accommodation, may be accounted for as the result of a retrobulbar neuritis, syphilitic, alcoholic, or tobacco, of which slight indistinctness of the margin of the disc is a recognised sign. The flattening of the face-muscles may probably be ascribed to a slight atrophic lesion of the nucleus of the seventh nerve, and, possibly, some similar process

<sup>a</sup> *Klin. u. Anat. Beiträge zur Path. d. Gehirns.* Teil III., pp. 100 ff.

<sup>b</sup> *I.e.*, the fibres destined for the ciliary muscle.

<sup>c</sup> *Von Graefe's Archiv.*, Bd. XXIV., p. 21.



in the vagus may have been at the root of the cardiac symptoms, though tobacco and alcohol will account for them with greater probability. At all events, there can be no doubt that there was syphilitic disease localised at the base of the brain, and it seems, therefore, most probable that it was through the circulation that the cortex was affected.

Our present knowledge of mental physiology does not justify positive conclusions as to cortical localisation drawn from mental symptoms, and it is, therefore, without any desire to lay overmuch stress on the fact, that I venture to point out the resemblance between the symptoms in this case and those which, according to Flechsig, will follow disease of his frontal association centre—an area comprising the greater part of the frontal and a portion of the limbic lobe. I quote the words of a pupil of Flechsig, Dr. L. F. Barker<sup>a</sup>:—"The individual may in his mind connect his personality with mental pictures which have in reality nothing to do with himself; thus he may think himself of enormous dignity, or that he is possessed of great wealth, or that he is a genius. In other cases he fails to connect his own person in any way by means of association with external perceptions, so that he may forget himself, or may fail altogether to observe his surroundings. Still in possession of numerous ideas, he may speak in an orderly fashion, although he appears unable to distinguish the true from the false, and the imagined from the experienced. Besides these logical defects he may show a diminution of his capacity for ethical and æsthetic judgment," &c. The resemblance is certainly striking, and, in addition, it may be remarked that this part of the brain is, with the kinæsthetic area, apt to be especially affected by the chronic meningitis due to prolonged indulgence in alcohol. It is possible that the tremors, the vague pains, and the increased knee-jerks may indicate, at least in some degree, affection of the motor area, though alcoholic lesions of the peripheral nerves have to be reckoned with as regards former, and the latter is, perhaps, susceptible of a different explanation. The reading of the symptoms which I should suggest would be

<sup>a</sup> Johns Hopkins Hosp. Bulletin, VIII., 70 (Jan. 1897), p. 12.

basal disease of slight extent, but affecting important structures, and combined with an arteritis which, although not severe, was sufficient by the lessened blood supply to produce morbid under-action, but not irrecoverable degeneration, in the cortical structures of the fore-part of the brain, already weak by heredity, and further impaired by alcohol and general syphilis. That the morbid state was due to *reduced* action of the cortical structures is also shown by the fact that towards the end the patient became saner when excited.

A few words as to the other symptoms. The muscular pains and tremors, and the "pins-and-needles" sensations in the feet, were probably to a large extent of alcoholic origin. The increased knee-reflexes may have been due to lesions of the kinæsthetic area, as has been mentioned, but it is also possible that the cause was spinal, and due to a localised meningo-myelitis affecting the 3rd and 4th lumbar segments of the cord. If the belt-like pain complained of was really a girdle-pain it affords another indication that the cord or the posterior nerve roots were affected—a not uncommon occurrence, moreover, in syphilitic disease of nervous centres. But as the pyramidal tracts would have to be involved in order to increase the knee-reflexes, and there was no paralysis, it seems on the whole more probable that this symptom was cortical. So little is known, however, of some of the conditions which produce it that it is unsafe to attach much importance to the phenomenon as a means of localisation.

The enlargement of the liver, not being attended with other symptoms of cirrhosis, may be ascribed to congestion due to alcoholism and weak heart.

**ART. X.—Unruptured Aneurysm of the Left Ventricle of the Heart; Sudden Death.\*** By J. J. BURGESS, F.R.C.S.I., L.R.C.P.I.

**THE** case which presented the following specimen was that of a lady, aged eighty, who, up to 8th November, was in the enjoyment of good health, and was wont to boast "she never troubled much a doctor."

On this morning her maid, as usual, brought up the old lady's breakfast, which she was in the habit of partaking of in bed for several years, rising immediately afterwards. She appeared in her usual health and spirits, but when an hour and a half had passed without any summons for her servant, the latter went into the room, and was shocked to see her mistress lying forward quite dead.

With the permission of her relatives I made an autopsy fourteen hours afterwards. The body was that of a tall, well-nourished woman, no marks of violence, a small chronic ulcer on the inner surface of right leg, and with moderate *rigor mortis* present. Under the integuments there was a thick layer of fat.

On opening the thorax both lungs were emphysematous; the right was adherent to the costal pleura to a considerable extent of its lower anterior surface. There were small adhesions on the left side, but none of any such size as on the right. The pericardium appeared normal; was nowhere adherent. The surface of the right ventricle and auricle was embedded in fat. In tilting the heart over I was struck by the appearance of the left ventricular wall just above the apex. In the specimen before you this is to a great extent lost, owing to its immersion in spirit. At the time it presented a projection like the rounded end of a hen-egg, the surface feeling like tissue paper, in marked contrast to the firm feel of the hypertrophied ventricle around.

On section both ventricles show well-marked fatty change; the valves are healthy. The left ventricle is hypertrophied; its cavity appears double—i.e., the ventricle proper and the aneurysm, which latter, in the fresh specimen, was capable of

\* Read before the Pathological Section of the Royal Academy of Medicine in Ireland on Friday, December 3rd, 1897. [For discussion on this paper see page 169.]

containing about half an ounce. You will see there is a small somewhat tendinous aperture of communication in the muscular structures. Then comes the aneurysm, with laminated clot and walls composed only of epi- and endocardium.

We have not far to seek for the cause of this condition. You will remark the extreme thickening of the right posterior coronary artery in the sections:—

- (1.) At its origin from the sinus of Valsalva ;
- (2.) In the centre of its course when its cavity is almost obliterated; and
- (3.) In the vicinity of the aneurysm, where it is practically solid.

The contiguous trunk of the vessel ought, in its normal course, to pass over the diseased area.

The left (anterior) coronary, although likewise thickened, presents no such external narrowing in the posterior branch. In this case there was no reason to suspect syphilis, the common cause of thickening of the intima—therefore the arteritis deformans was atheromatous in origin. In the zona tendinosa of the mitral valve there is a calcified nodule the size of a pea.

Legg, in the Bradshaw Lectures, 1883, on this subject, speaking of the rarity of this condition, says that of 1,890 *post-mortems* at St. Bartholomew's, there were only three examples of aneurysm of the left ventricle. He further states that it is most common between forty and seventy, differing from Turnham, who was of opinion that it was a disease of early life, between twenty and thirty.

Its ætiology is due to either fatty degeneration or fibroid disease of the cardiac wall, which, according to Pye-Smith, may be set up by four causes:—

- (1.) Myocarditis, rheumatic or spontaneous.
- (2.) Syphilis.
- (3.) Thrombi in apex of ventricle.
- (4.) Degeneration of wall caused by want of blood supply, corresponding to the infarction theory of Cohnheim.

**ART. XI.—*The Lacto-phosphate of Lime in Acne and Furunculus.*** By H. S. PURDON, M.D.; Consulting (formerly Attending) Physician, Belfast Hospital for Diseases of the Skin.

THE lacto-phosphate of lime, with or without iron (the latter of use when anæmia is present), is well known as a therapeutic agent, more especially since the researches and published papers of its advocate—Dr. Dusart—have appeared in the various journals.

Like other physicians I have frequently prescribed the syrup of the lacto-phosphate of lime in various complaints. However, I have derived much benefit from its use when given in certain forms of acne, especially when large or hypertrophied, and also in furunculi or “boils.” In cases of the latter, combined with iron it is more useful; whilst a favourable and palatable recipe, when cod-liver oil is thought to be required, is as follows:—

Take of—Gum Arabic	-	-	-	3 x
Water	-	-	-	℥ i
Syrup of the lacto-phosphate of lime				℥ iiii
Cod-liver oil	-	-	-	℥ iv
Essential oil of bitter almonds	-			ʒ iii

Rub the gum, water, and syrup together until a smooth mucilage is made, then add the cod-liver oil gradually, with constant stirring, and lastly the essential oil of bitter almonds. Thus made, each tablespoonful of the cod-liver oil and syrup of the lacto-phosphate of lime contains four grains of lacto-phosphate of lime and 50 per cent. of cod-liver oil.

Dr. Dusart, in his “Researches on the Action of the Phosphate of Lime,” page 49, remarks—“Bearing in mind the observations and facts which have been related, and which all owe their value to direct experiments, do they warrant the assertion that lacto-phosphate of lime possesses the value we ascribe to it?—namely, that of being an *agent of nutrition*. . . . Accustomed as we have always been to the opinion which considered phosphate of lime as deprived of any physiological activity, it was not without a certain emotion that we saw manifestations of which

some have struck us on account of their intensity. Phosphate of lime is not merely, as Dr. Bouvier demands, a substance 'able to harden bones,' but it becomes an active agent in nutrition, and its most valuable indication is from this property."

Acne, according to the late Sir Erasmus Wilson, is "essentially a disease of debility and especially of nutritive debility." Although there are to be met with many cases of acne in young women and youths at the age of puberty, in which sexual irregularities have a good deal to do with the attack, often dyspepsia is present. However, in such cases, the syrup of the lacto-phosphate of lime is beneficial and superior to the sulphide of calcium, which is often prescribed for acne, as also in "boils." The last mentioned are, I suppose, an "evidence of depraved nutrition," although their exciting cause may be unknown, and will be often prevented from occurring in successive crops by the syrup of the lacto-phosphate of lime with iron. As for local treatment—that is a subject I have avoided in the preceding brief remarks.

In conclusion, when the patient is liable to outbreaks of acne on shoulders and chest, in addition to the constitutional as well as local treatment I may say that I have noticed great benefit from wearing Balbriggan "Flaxonia" linen undershirts, which do not get cold and clammy with perspiration, allow of ventilation, and are "soothing" for an irritated skin.

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#### SKIAGRAPHY IN ŒSOPHAGEAL OBSTRUCTION.

THE value of skiagraphy in detecting foreign bodies in the Œsophagus is discussed by Péan, who states that children can swallow bodies as large as half an inch in diameter, and that the recognition of the presence of obstruction is often delayed because the child swallows liquids without difficulty and does not complain of pain. Skiagraphy not only permits an accurate location of the foreign body in most cases, but determines also the operation of election. After the Œsophagus has been exposed, coins, buttons, &c., may be gradually caused to reascend the Œsophagus to such a level that they may be extracted from above, thus avoiding the danger and discomfort of opening the gullet.—*The Hospital*, January 15th, 1898.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Lectures on Angina Pectoris and Allied States.* By WILLIAM OSLER, M.D., F.R.C.P.; Professor of Medicine, Johns Hopkins University, Baltimore. New York: D. Appleton & Co. 1897. Pp. 160.

THESE lectures, delivered in 1896 to the Graduate Class in Medicine at the Johns Hopkins Hospital, have given Dr. Osler an excellent opportunity of exhibiting those qualities for which he is so justly famed. There are many physicians whose scientific attainments equal his; but can we point to any in whom wide experience and careful observation are joined to and tempered by such a profound acquaintance with the literature of his profession, and especially the classical medical literature of the past? Dr. Osler also has the faculty of writing what is pleasant and easy to read. In his well-known Text-Book of Medicine everything is necessarily condensed and brief; but in these lectures we see Dr. Osler at his best.

They contain an admirable account both of the True and the (so-called) False varieties of Angina. One of Dr. Osler's good qualities is the care with which he makes notes of the cases he has seen in his practice. He has seen about sixty cases of angina, and the notes of many of these form a most important feature in the work. Nearly all the striking features of the disease are made more vivid by the account of the history and symptoms of some patient of his. No one can read them carefully without acquiring a lively conception of the manifold features of this malady.

The book, then, is a careful study and *résumé* of the literature of the subject, together with the author's clinical observations, rather than work containing original researches or new theories. We see this, perhaps, most plainly in the

chapter on the cause of the pain and the condition of the heart in angina. Dr. Osler gives us a number of theories and views on the subject—not, indeed, all that have been propounded, for Huchard has sixty-one theories grouped into six main divisions. Still, whoever reads Dr. Osler's chapter may consider that he knows something about the literature of the subject, but we fear he will not be very much the wiser as to the author's own view. This seems rather a pity. When so able and distinguished a physician, who has obviously devoted so much thought to the subject, writes upon it, we think his readers should know to which of the various views enumerated he himself leans, and what opinion, if any, he has himself formed upon the disputed points connected therewith. This omission we regard as the chief blot upon the book. However, we are glad to say this refers mainly to the theoretical portion of the subject; as regards diagnosis and treatment Dr. Osler is as clear and definite as could be desired.

After a historical introduction the author describes the features of the disease. The abnormal sensations he distinguishes into three classes:—(1) consciousness of the heart's action; a fluttering; a sense of tension; (2) pain, varying in intensity and duration; and (3) a sense of imminent dissolution; *angor animi*; a sensation of a pause in the operations of nature. These classes of sensations may exist singly or combined. He divides the angina into true and false, as do most writers on the subject; the true is discussed in three lectures, which deserve to be carefully studied. Not only is the disease itself most graphically depicted, but full mention is made of several allied conditions. *Syncope anginosa*, the special feature of which is an attack of faintness without pain, but which may prove fatal; the *Adams-Stokes' syndrome*, consisting of permanently slow pulse, associated with vertigo or syncope; *angina pectoris sine dolore*; and *cardiac asthma*—all receive due attention.

False angina is divided into neurotic and toxic; most of the patients whose attacks come into the first category are either hysterical or neurasthenic, or the features of their attack are distinctive of hysteria. In others, vaso-motor phenomena are especially marked; and in some cases the



angina seems to be excited reflexly either from peripheral or visceral irritation. Instructive notes of cases bring each of these groups vividly before the reader's mind.

Dr. Osler's remarks on diagnosis are practical and useful. As to treatment, he points out that every case must be carefully studied—"the practitioner must make himself acquainted with its individual character." As far as drugs are concerned, he advocates iodide of potassium, 30 to 45 grains daily, continued for years, and the nitrites, employing nitroglycerine in increasing doses until the patient notices a slight glow or flush or fulness in the head.

We warmly commend Dr. Osler's lectures to our readers.

*Twentieth Century Practice*. An International Encyclopædia of Modern Medical Science by leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume XI. Diseases of the Nervous System. London: Sampson Low, Marston & Co., Ltd. 8vo. Pp. 962. 1897.

IN this volume the all-important subject of Diseases of the Nervous System is continued and completed. The chief topics discussed are diseases of the cerebro-spinal and sympathetic nerves, tropho-neuroses, diseases of the spinal cord, tabes dorsalis, combined system-diseases of the spinal cord, and pain. It will be observed then that the subject-matter of the eleventh volume of this great work is of surpassing interest.

The article on Diseases of the Cerebro-spinal and Sympathetic Nerves runs to 476 pages, nearly one-half the entire volume. The bibliography at the end contains 240 references. The author of this treatise—for such it is—is Dr. James Hendrie Lloyd, physician to the Nervous Department of the Philadelphia Hospital. His work is divided into two parts. In the first the author discusses in general terms the "anatomy, physiology, symptoms, and pathology of the nerve-trunks"—these are his own words. In the second division of the subject each parti-

cular nerve is taken up, its diseases are described and its pathological relations are pointed out.

Dr. Lloyd's description of the general anatomy of the nerves is based upon Golgi's method of silver staining—a method which, as Dr. Alexander Hill has said,<sup>\*</sup> has thrown more light upon the structure of the nervous system than all other methods, microscopical, physical, or experimental, put together. The author shows that the essential element of the nervous system is the nerve-cell—an absolute anatomical unit, inasmuch as it exists by itself, independent of all other nerve-cells, or of other tissues. It has no *continuity* of structure with any of these, but only *contiguity* of structure. The nervous system, therefore, is only an aggregation of distinct and separate nerve-cells, having mutual relations, but not anatomical continuity. The anatomical unit now called the *neuron* includes the body and processes, including the axis-cylinder, of an individual nerve-cell, such as a large pyramidal cell of the cerebral cortex. Enough has been quoted to show that the anatomical views set forth in Dr. Lloyd's able article are the most modern and advanced. The same remark applies to his account of the general physiology of the nervous system.

The sections on diseases of the individual cranial nerves are of great interest. The account of the different lesions is probably the most complete which has as yet been published, and it is made still more intelligible by illustrations of considerable artistic merit. Several woodcuts after Van Gehuchten bring home to the reader's mind the minute anatomy of certain of the cranial nerves.

Travelling out from the cranium, Dr. Lloyd proceeds to describe the various diseases to which the spinal and sympathetic nerves are due. In this part of his work there is a particularly full account of sciatica, that most troublesome of affections, which, by the way, Dr. Lloyd makes no attempt to define. At page 330 he does, indeed, say that "the main trunk of the sciatic nerve may be injured by pressure and by various wounds. It may also be involved in tumors, and may be the seat of special

<sup>\*</sup> The Chrome-Silver Method. Brain, Part I. 1896.

*inflammatory or irritative lesions which produce the symptoms of the well-known disease called sciatica."*

The account of peripheral neuritis is very full and most interesting. Dr. Lloyd observes (page 374): "The term multiple neuritis may be limited to that disease process which is set up in the trunks and distribution of a number of nerves at the same time, and is caused by the irritant action of some toxic substance circulating in the blood. As a consequence of this origin the disease is usually symmetrically distributed, although its exact distribution depends in a measure upon the particular poison in action." The author shows very clearly that the disease was distinctly recognised and described from the clinical standpoint by an American physician, Dr. James Jackson, in a paper on a Peculiar Disease resulting from the use of Ardent Spirits, published in the *New England Journal of Medicine and Surgery* for 1822. He says, however, that the first observer to demonstrate the true pathology of multiple neuritis was undoubtedly Duménil, whose first paper appeared in the *Gazette hebdomadaire* for 1864, and was entitled "Paralysie périphérique du mouvement et du sentiment portant sur les quatre membres." The article on multiple neuritis does great credit to Dr. Lloyd, and the illustrations are especially striking.

The last section of Dr. Lloyd's masterly communication is devoted to diseases of the sympathetic nervous system, in the preparation of which he acknowledges in graceful terms his indebtedness to Dr. William G. Spiller. The author records a remarkable case of unilateral facial hyperidrosis (right side) with widening of the palpebral fissure and dilatation of the pupil, caused by irritation of the cervical sympathetic nerve on the right side. The patient (a white male, aged forty-five years) was admitted into the Philadelphia Hospital with right hemiplegia. The photograph of the patient shows the perspiration in beads on the affected side of the face. The central connections of the cervical sympathetic system, by which the above-mentioned symptoms are caused, are supposed to be in the optic thalamus.

The next article in this volume is on Tropho-neuroses,

by Dr. Charles K. Mills, Dean and Professor of Mental Diseases and Medical Jurisprudence in the Medical Department of the University of Pennsylvania, and Visiting Physician to the Philadelphia Hospital. Scleroderma, acromegaly, and adiposa dolorosa are excluded, being reserved for a separate article by Dr. F. X. Dercum, Clinical Professor of Nervous Diseases to the Jefferson Medical College, Philadelphia.

Dr. Mills' reference to the bibliography of hemifacial atrophy are by no means complete. He does, indeed, mention Romberg's observations of the condition he called "Tropho-neurosis" in 1846; but he omits, for example, any allusion to Lasègues' admirable paper on the subject published in the *Archives générales de Médecine* (quatrième série, Tome XXIX., 1852, page 71), and translated for this Journal by Dr. William Daniel Moore, who contributed to our pages a case of unilateral atrophy of the face observed in his own practice in the year 1851 (see Volume XIV., August, 1852, page 245).

The case of the curious condition called by Dr. Dercum "Adiposis dolorosa," which illustrates his account of the affection is certainly an extraordinary one. There are two photographs of the patient, a widow, aged 51.

The article on Diseases of the Spinal Cord is the joint work of Dr. L. Bruns, of Hanover, and Dr. F. Windscheid, of Leipzig. It is an able and systematic treatise on the subject, thoroughly German in character and tone. We wonder who is the translator of the German essays in *Twentieth Century Practice*, for he has done his work of translation uncommonly well. The chief headings in this article are—injuries of the spinal cord, lesions of the cord arising from diseases of the vertebræ, tumours, hæmato-myelia, by which term the authors imply only primary hæmorrhages into the substance of the spinal cord (spinal apoplexy); inflammation of the spinal meninges, anterior poliomyelitis, myelitis, including acute and chronic transverse myelitis, Landry's paralysis, and acute disseminated encephalo-myelitis (Leyden's *acute central ataxia*), which is a myelitis with numerous small foci in the cord, pons, and usually the cerebrum; absence of the spinal cord, a

brief definition of syphilis of the spinal cord, syringomyelia, spastic spinal paralysis, amyotrophic lateral sclerosis, and progressive spinal muscular atrophy.

Dr. Paul J. Möbius, of Leipzig, editor of *Schmidt's Jahrbücher der gesamten Medicin*, writes on Tabes Dorsalis. With reason he may claim to speak with authority on this disease, seeing that he has regularly reported the articles upon it in *Schmidt's Jahrbücher* since 1879, and that all the important modern contributions to the literature of the subject are reviewed in those reports. Dr. Möbius states that the essays devoted to tabes dorsalis up to the present time number about two thousand. He is essentially dogmatic as to the relations between tabes and syphilis. "We know now," he says, "that tabes is metasymphilis, i.e., a sequel of syphilis. Tabes becomes more frequent in just the degree that syphilis extends. . . . Like tabes, general paralysis of the insane was late in being recognised, but becomes more frequent year by year. The two diseases, in my opinion, are essentially one—metasyphilis of the nervous system. Their localisation alone differs, that is, if the brain is especially diseased we speak of general paralysis; in case the centripetal nerve-fibres are particularly affected the term tabes is used. The historical development of our knowledge, however, and the usage of practical medicine separate tabes from general paralysis. This usage, which classifies the former with diseases of the spinal cord and the latter with mental diseases, is followed in this work" (pages 805, 806).

Möbius claims (page 852) that his "description of the signs of tabes is reasonably complete." His claim is fully justified. As regards diagnosis, reflex iridoplegia, vesical disturbances, lancinating pains, and absence of the patellar reflex constitute the basis of tabes. "If any sign is present which may belong to tabes," the author writes, "the pupils are to be examined first of all. If reflex iridoplegia is found the question is practically decided. If we exclude the exceedingly rare lesions (especially tumors) in the vicinity of the corpora quadrigemina, reflex iridoplegia is a symptom which by itself suffices for the diagnosis of

tabes. From a practical standpoint reflex iridoplegia is equivalent to tabes."

The author's views on prognosis are sound. "In general," he observes, "the more slowly tabes begins the more benign it is. If moderately severe pains and slight disturbances of the bladder have existed for years, there is a certain probability that the tabes will continue to be benign. On the other hand, a more or less stormy beginning is of evil significance. Early developing and rapidly increasing ataxia is especially unfavourable. Tabes dolorosa is a bad form of the disease, in which severe and frequent pains not only bring the patient to despair, but also diminish his bodily strength and power of resistance. A similarly bad form, and indeed one of the worst, is the one with gastric crises. In this both pain and hunger assail the patient; it is necessary to feed him as well as possible in the intervals of the attacks, in order that he may not be worn out. Unfortunately, when gastric crises are present it is not rare for other crises, especially those of the larynx, to develop and make the prognosis still worse. Other symptoms are also of unfavourable omen from the outset, especially affections of the osseous system" (pages 860, 861). He adds: "A symptom which in itself is among the worst, but in general promises a favourable course of the disease, is early developing atrophy of the optic nerve."

The author's views on treatment are pessimistic. He says: "The history of the treatment of tabes is painful and touching. It shows us, on the one hand, how weak human judgment is, and, on the other, how much faith man possesses." To the question, "Is there a prophylaxis of tabes?" comes the answer, "Since tabes is metasymphilis, avoidance of syphilis is also avoidance of tabes." "Since syphilis is the cause of tabes, anti-syphilitic treatment appears to be the causal indication." "The assumption that tabes is caused by the mercury is so ridiculous, that it is not necessary to discuss it." We must quote one more admirable paragraph—"The modern humbug, organic extracts, is a repulsive subject to mention. We may well believe that physicians who have ventured to

treat tabes with testicular juice or sheep's brains are now thoroughly ashamed of it." Perhaps because the author is a German, he writes "*eh bien!*" at page 870, or is his translator responsible for the slip? Electrotherapy in tabes is, in our author's opinion, suggestive treatment—a remark which we look upon as most apt. "Massage, which is unduly lauded by its advocates, is stimulation of the skin and nothing more." "A chapter of modern medicine of which physicians should be ashamed is the doctrine of nerve-stretching and of extension of the spinal column." Such are some of Möbius' epigrammatic phrases anent tabes and its treatment.

Möbius freely admits that treatment benefits the individual symptoms of tabes. Take, for example, the pains of the tabetic. Here we were formerly restricted to external remedies, but now we have acquired a "knowledge of new and rather harmless remedies for pain. The most important of these are acetanilid (antifebrin), phenacetin, and antipyrin." "It is folly to prescribe the bromides for the pains; they are of no use whatever." While we thoroughly agree with this latter statement, we cannot accept the author's view that the coal-tar derivatives are even "rather," or (as we would say) comparatively, "harmless." We know at least of instances in which the continued use of phenazone (antipyrin) led to the development of epiphenomena which seriously threatened the patient's life, and brought him for the time being to the brink of the grave. Further, Dr. Möbius prescribes what are, in our opinion, unnecessarily large doses of phenazone and salipyrin—1 to 2 grammes (gr. 15-30) of the former, and 1 to 3 grammes (gr. 15-45) of the latter. On the whole, however, we consider that the author's views on treatment are practical, in conformity with common sense, and, above all, useful.

We can do no more than notice with approval the learned article on the combined system diseases of the spinal cord, which Dr. Adolf Strümpell, the distinguished Professor and Professor of Special Pathology and Therapeutics in the University of Erlangen, has contributed.

This very interesting volume ends with a very deep, if somewhat transcendental, essay on "Pain," by Dr.



Lightner Witmer, Ph.D., Assistant-Professor of Experimental Psychology in the University of Pennsylvania. In this article the phenomena of pain are considered chiefly from the point of view of the science of psychology. A wonderfully extensive bibliography is appended to Dr. Witmer's monograph.

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*Mediterranean, Malta, or Undulant Fever.* By M. LOUIS HUGHES, Surgeon-Captain, Army Medical Staff. London : Macmillan & Co., Ltd. 1897. Pp. 232.

CIVILIAN medical practitioners gladly welcome contributions to professional literature from their *confrères* in the public services, and such a contribution as the one that forms the subject of this notice causes a feeling of regret that similar works are so seldom published by them. Naval and military medical officers are frequently placed in positions where they have favourable opportunities of investigating endemic or other prevalent diseases, the nature of which is still obscure or undetermined. Owing to the exigencies of the services and frequent changes of station it is doubtless often difficult for these officers to apply themselves to the production of an exhaustive work on a special subject. But not infrequently, upon arrival at a foreign station, a medical officer meets with cases he is quite unacquainted with. He naturally first seeks information and help in his work from his predecessors. Such assistance, however, may not be procurable—any experience which the officers who preceded him may have obtained during their tour of service having in most cases gone with them. Thus it happens that the newly-arrived medical officer, in the absence of reliable instruction, has to take up his professional work, not where his predecessors left off and with the advantage of their experience, but *ab initio*. If medical officers placed under such circumstances would publish an accurate description of the diseases they had to deal with, and give as far as possible the views of those who had previously had experience of these particular affections, together with the result of their own observations, much good would be effected. This is the kind of work that Surgeon-Captain Hughes has done, and he has done it well. His



book represents a considerable amount of research and observation; and the publication of his study of a disease which, as he observes, is at present the scourge of the Mediterranean, is creditable to the Army Medical Department as well as to the author.

Under the name of "Malta fever" and many other synonyms, descriptions have from time to time been given in official Blue Books and in other more or less accessible publications of a tedious continued fever prevalent in the island of Malta. The real nature of this fever was not known until 1886, when Surgeon-Major D. Bruce, M.D., discovered a specific organism in the spleen of a fatal case of the disease. This micro-organism, for which sufficient bacteriological reasons as to its being the proximate cause of the fever in question are adduced by the author, was named by him in 1893 the "*Micrococcus melitensis*," and to this appellation he now would add "*vel Brucii*."

Surgeon-Captain Hughes has had singular opportunities for studying "Malta fever." His work is based upon notes of over a thousand cases, which during six years of almost continuous hospital practice he had the opportunity of seeing or treating in Malta and elsewhere in the Mediterranean; and during this tour of service the author, together with his wife and two sisters, suffered from the affection. "Malta fever" is a disease which is the most important and, next to venereal diseases, the most prevalent form of sickness affecting our Mediterranean forces. The importance, therefore, to the community and to the State of an improved knowledge of the disease, and the necessity for the recognition by the authorities of its ætiology and the adoption of the means of its prevention, as indicated by Surgeon-Captain Hughes, cannot be over-estimated.

Surgeon-Captain Hughes defines the fever as "an endemic pyrexial disease, occasionally prevailing as an epidemic, having a long and indefinite duration, an irregular course, with an almost invariable tendency to undulatory pyrexial relapses. It is usually characterised by constipation, profuse perspirations, and accompanied or followed by symptoms of a neuralgic character; often accompanied by swelling and effusion of the joints and other rheumatoid symptoms. After death

the spleen is found to be enlarged and often softened, many of the organs congested, but Peyer's glands neither enlarged nor ulcerated, nor is ulceration present in other parts of the small intestine. There is a constant occurrence in certain tissues of a definite species of micro-organism."

From the fact that the fever thus defined occurs side by side with enteric and paludic fevers as well as with cases of febricula or simple ardent fever, and with indefinite cases of fever lasting from seven to twenty-one days, which are more severe than simple ardent fever, much doubt has existed as to its nature. The varied names that have been given to the affection have also added to the uncertainty concerning it. Bruce's discovery of a specific micro-organism has done much to clear away this uncertainty and to establish the distinction between it and enteric fever—a variety of which disease many observers formerly considered Malta fever to be. The name "undulant fever," which the author has given to the disease, is one we cannot congratulate him on having chosen, although we freely confess that we cannot suggest a better one. He has named it "undulant fever" as describing "one of the most constant and characteristic clinical features of the disease—namely, the pyrexial undulations so apparent upon the ordinary temperature records." The term has other advantages in Dr. Hughes' opinion, but it is one, we think, that is not likely to come into general use. It is, however, a better designation of the disease than that in the official *Nomenclature*, as "Mediterranean fever" (synonym, "Malta fever") implies a theory of geographical limitation which recent investigations show to be erroneous. Fever of a similar type, and in cases of which a serum-examination gave a similar reaction to that of undulant fever, has been met with in China and in India.

Surgeon-Captain Hughes gives a full description of the micro-organism of the fever, the method of procedure adopted in obtaining it, and details of inoculation experiments on monkeys. He states that the *Micrococcus melitensis* was not found in any of the fatal cases of enteric fever in which it was sought for. In nine such cases pure cultivations of Eberth's bacillus were isolated from the spleens. The author discusses ably and fully the ætiology of the disease—its pre-

disposing causes, method of propagation and dissemination, seasonal prevalence, &c. Undulant fever, in his opinion, is due to an aerial virus from infected soil, and is caused, in the majority of instances, by a specific micrococcus, emanating during hot, dry weather from a saprophytic existence in soil polluted with the fæces of those suffering from the same disease. He adduces numerous examples of outbreaks of the fever associated with insanitation; and he does not believe that there is any connection between the disease and a polluted water supply or contaminated milk. It especially prevails from May to the middle of October. One attack appears to give immunity from subsequent attacks, but the fact that a patient has suffered from enteric fever does not in any way protect him from a subsequent attack of undulant fever, or *vice versa*.

Chapter III. deals at length with the symptomatology. The fever is described as occurring under three types—the malignant, the undulatory, and the intermittent. These types may be looked upon as due to variations in the severity of the action of the virus. The typical temperature curve of the fever is shown by a number of charts. The characteristic pyrexia is represented as a series of intermittent waves or undulations of remittent pyrexia. These waves are of an irregular character. They vary in number from one to seven, and in duration from three days to eight weeks, the average being about ten days, with a more or less apyrexial period between. In the undulatory—the usual type of the disease—the duration of the fever, which averages some 60 days, varies within such wide limits as from 20 to 300 days or more; while the total stay in hospital, which averages some 90 days, may extend to two years where sciatica or other sequelæ are present. There is always extreme resulting anæmia and debility. The fever is not attended with any eruption. Neuritic and arthritic symptoms are common during the course of the illness. Particulars of several cases, illustrating different symptoms, &c., are given.

One peculiar symptom mentioned as of comparatively frequent occurrence—viz., orchitis—we may be excused for referring to, inasmuch as we believe the first detailed description of the complication was published in this *Journal*

(February, 1872), by Dr.—now Sir George—Duffey, and particularly as that paper is not mentioned in the very full bibliography, extending over four pages, of references to Malta fever given by Dr. Hughes.

The author discusses very fully and fairly the diagnosis of undulant fever from enteric fever. A large number of cases of the latter occur in Malta, and the author admits the difficulty of making a correct diagnosis between the two affections, particularly in some of the more serious cases. The pyrexial curve is on the whole, he thinks, the most accurate guide. Ehrlich's diazo test and Widal's serum reaction test are referred to as means of giving help in the diagnosis.

The mortality is estimated at about 2 per cent. of the cases attacked. But with regard to the length of time that a patient may expect to be incapacitated from active work, prognosis is unfavourable and unreliable. The author's observations on the morbid anatomy of undulant fever are based on the reports of sixty-two *post-mortem* examinations. These are divided into two classes :—1. The acute and rapidly fatal cases—i.e., those in which death occurred during the first four weeks of the disease (twenty-seven cases); and 2, cases fatal at a later period. In Class 1 the naked-eye appearances were those of intense congestion especially marked in the internal organs. Peyer's patches were unaffected. There was "no condition in any way approaching the lesions found in enteric fever." There was congestion of the colon in many of the cases. In Class 2 the only appearances were those indicative of long-continued irritation of the tissues.

From a considerable experience, many years ago, of the different varieties of fever occurring in Malta, we can appreciate the value of Surgeon-Captain Hughes' book, and we congratulate him on producing a work of much authority and usefulness.

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*Practical Muscle-testing and the Treatment of Muscular Atrophies.* By W. S. HEDLEY, M.D. London: H. K. Lewis. 1897. Pp. 128.

THE first part of this work is devoted to a description of the methods of testing the conditions of the different

muscles, chiefly by means of electricity. The necessary apparatus is enumerated and described; the laws of normal electro-muscular contractility are given; certain electrical ideas—as resistance, density, &c.—are defined; the laws of abnormal contraction are laid down, and the value of the reaction of degeneration in diagnosis is stated. Chapters then follow on the motor points, which are illustrated by the usual diagrams, and on electro-cutaneous sensibility, and on the resistance of the body as a guide to diagnosis. In the next chapter a short account is given of the action of the principal muscles and of the phenomena observed in their paralysis, while the last chapter of the first part gives definitions of many terms used in electro-therapeutics and in nervous pathology, and is illustrated by some good diagrams showing the different regions in the cord.

The second part is on the treatment of muscular atrophies. Their classification, and treatment by electric methods and by systematic exercise, is pretty fully described and explained. It would have been interesting to have the records of some cases which had been so treated.

The work contains much useful matter, plainly and practically stated, and will prove very useful to anyone beginning the study of electro-therapeutics.

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*The Living Substance as such: and as Organism.* By GWENDOLEN FOULKE ANDREWS. Boston: Ginn & Co. 1897. Pp. 176.

THIS handsome volume will be found very disappointing on perusal. It is with the greatest difficulty that the meaning of the authoress can be extracted from the mass of words and involved sentences in which it is contained. Mrs. Andrews, who, she tells us, has exceptionally far-sighted eyes, with great range and swiftness of accommodation, has seen many things which less endowed observers will probably miss. She rejects all methods of preserving tissues which have hitherto been proposed—"I have convinced myself that 'preservatives' fix for us little of the

true structure of the living substance, and can at best keep for us grosser relations, of a mixed sort in point of time; hiding an infinite complexity of form, and destroying perforce those infinitely delicate relations whose fleeting harmonies make up life phenomena."

From an examination of living substance in the living state, Mrs. Andrews has arrived at a conception of the structure of protoplasm somewhat similar to that of Bütschli—namely, that it is a sort of honeycomb or froth. "The facts as they appear to me seem in mosaic to offer the following tentative formula for the living substance—Protoplasm is a very complex emulsion, having the physical arrangement of a very finely subdivided, variably viscid foam, whose characters are coextensive with the continuous element of all visible optical reticula."

The extracts which we have given will show our readers how hopeless would be the task of giving, within reasonable limits, an intelligible summary of this work. To anyone who wishes further acquaintance with the views of the authoress we must say—buy the book and read it for yourself.

*A Text-Book of Special Pathological Anatomy.* By ERNST ZIEGLER. Translated and Edited from the Eighth German Edition by DONALD MACALISTER, M.A., M.D., and HENRY W. CATTELL, M.A., M.D. Sections IX.—XV. New York: The Macmillan Company. 1897.

IN this instalment of Ziegler's great work we have the pathological anatomy of the alimentary tract, of the liver and pancreas, of the respiratory system, of the urinary organs, of the genital system, of the eye (written by Professor Haab, of Zürich), and of the ear (written by Professor Wagenhäuser, of Tübingen)—in all 643 pages, besides the index, and 254 figures.

It is quite unnecessary to say anything in praise of this, the deservedly most popular work on pathological anatomy in existence. In the present edition it has lost none of the excellences which have given it its great circulation. The text is still as concise, and at the same time as complete

and accurate, as before, while the new drawings which have been added deserve the highest praise we can give them, which is to say they are worthy companions of the older figures. The translators have done their work well, and have made a thoroughly readable English book of the text, while as editors they have largely added to the value of the work by their additions and alterations.

We cannot too strongly recommend this translation to all those who, either from want of time or unfamiliarity with the German language, are unwilling to read the work in the original. The admirable index, extending to 31 pages, greatly adds to the value of the text.

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*Lectures on Physiology.* First Series. On Animal Electricity.  
By AUGUSTUS D. WALLER, M.D., F.R.S. London:  
Longmans, Green & Co. 1897. Pp. 144.

THESE lectures form part of a course delivered at the Royal Institution by Dr. Waller as Fullerian Professor of Physiology. In their present form they differ from the lectures as delivered, partly in containing some matter too difficult and advanced for a non-technical audience, and partly in omitting three lectures on the electro-motor action of the heart and on the action of nitrous oxide, which are intended to be published later on as a second series. In his preface Dr. Waller complains justly of the want of laboratory accommodation for the Professor of Physiology at the Royal Institution, and rightly attributes to this deficiency the sterility of the professorship as compared with the chairs of physics and chemistry, to which are attached suitable apartments for practical work. Although this exceptional treatment of the Professor of Physiology has led to the loss by the Institution of Dr. Waller's services, we hope it will not interfere with the publication of his subsequent series of lectures, whose value may be anticipated from that of the present course.

The volume before us contains six lectures, in which a preliminary exposition is given of the principal data concerning the electro-motor reactions of nerves. It must



not, however, be supposed that it is only beginners who will derive profit and instruction from a study of the work. The elegance and ingenuity of the methods employed, the demonstrative character of the experiments, the new aspects under which familiar subjects are viewed, make every page of the book interesting and instructive, while new facts are not wanting—such as the proof of the production of carbonic acid in the activity of the nerve-fibres, and the remarkable differences between the nerves of cold-blooded animals (frogs) and those of warm-blooded animals (kittens). In the former the anelectrotonic currents are much larger than the katelectrotonic, and the so-called negative variation of the demarcation current is well-marked, while in the case of the kitten's nerve the anelectrotonic and katelectrotonic currents are of equal magnitude, and there is no negative variation.

In the first lecture a new nomenclature is proposed. Confusion almost invariably arises in the minds of students from the terms positive and negative, owing to a failure to grasp the idea that what we speak of as negative in the nerve or muscle resembles the zinc in the galvanic battery, and that in the tissue the current passes from this to the part we call positive, whereas outside, as through the galvanometer, the current runs from the latter to the former. Dr. Waller proposes, in order to remedy this confusion, that what we have hitherto called negative—*e.g.*, the cut end of a nerve, or what is really electro-positive, should be called “zincative,” while what we call positive, as the long section of the nerve, or what is really electro-negative, should be called “zincable.” Whether this new terminology will be accepted by physiologists remains to be seen.

In the first lecture the great fact is stated and exemplified—namely, that active matter is electro-positive or zincative to inactive matter, that more active matter is electro-positive to less active matter, that matter that is by any means stirred up to greater activity is rendered electro-positive towards undisturbed matter, and that matter whose action is lowered is electro-negative to matter whose action is raised. This is rightly spoken of as the



master-key to many otherwise most intricate and complex problems of animal electricity.

Throughout the lectures an isolated nerve is employed as a representative test object of living matter, and its changes under the influence of magnets and stimulation are recorded by the galvanometer, the spot of light being photographed by a simple but ingenious method on a slowly-moving plate. Of these records large numbers are reproduced in the text. The action of ether, chloroform, carbonic acid supplied from without or generated in the nerve itself by tetanisation, the influence of temperature, internal and external polarisation are all illustrated, as well as the difficult subject of the polarisation increment and the electrotonic decrement. The extrapolar currents produced in a nerve, the so-called anelectrotonus and katelectrotonus, although of electrolytic origin, are shown to be, nevertheless, physiological, as they are diminished or abolished by pinching the nerve, by raising the temperature, and above all, by the action of anæsthetics. But it would be impossible for us to reproduce all the suggestive and valuable matters which are contained in these lectures, and any attempt to reproduce them in other words than those of the author would fail to do his work justice. We can only recommend the lectures to everyone who is interested in the properties of living matter, and express a hope that we shall soon have another series of equally charming lectures from the same writer.

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*Elements of Human Physiology.* By ERNEST H. STARLING, M.D., F.R.C.P. Third Edition. London: J. & A. Churchill. 1897. Pp. 468.

THE second edition of this excellent manual of physiology was published only in 1895, and consequently we cannot expect to find much new matter in the present issue. The alterations are chiefly in the account of the coagulation of the blood, and in the section on the nervous system. In the former section we find Hammarsten's most recent experiments noticed, from which he concludes that the part of lime in coagulation is in the formation of the

ferment, and that if this is once formed coagulation may take place in the presence of excess of oxalate. In the chapter on the nervous system many alterations have been made, bringing the subject, as is the case in the other chapters, well up-to-date. There are only 14 pages more in the third edition than in the second, while the number of drawings has been increased from 126 to 141. In speaking of the former editions we expressed our opinion that Dr. Starling's work is the best text-book of physiology we have for junior students, and for those requiring only a pass. This opinion we still hold.

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*Du rôle des Cellules migratrices provenant du sang et de la Lymphe dans l'organisation des Tissus chez les Animaux à sang chaud.* Par LOUIS QUERTON. Bruxelles: Hayez. 1897. Pp. 56.

WHEN lamellæ of glass, according to the method of Ziegler, are introduced into vascular tissues there occurs an abundant emigration of multinuclear leucocytes with dense nuclei and granular protoplasm, accompanied by a fluid which coagulates, forming a cellulo-fibrinous capsule around the foreign body. At a time, which depends on the intensity of the irritation, there occurs an emigration of uninuclear vesicular cells with an abundant and homogeneous protoplasm. These cells multiply by division both within and without the vessels, and becoming transformed into connective tissue cells, form a capsule around the foreign body. At the same time the multinuclear cells undergo disintegration, and are in great part ingested by the cells with vesicular nuclei. The appearance of mitotic figures in the inflamed tissue points to division of the fixed cells, which shows the accessory intervention of the pre-existent tissue in the inflammatory organisation.

The author concludes that the elements of granulation tissue are of hæmal origin for the following reasons:—The similarity between the leucocytes with vesicular nuclei and the cells out of which young connective tissue is formed; the appearance of fibroblasts always in the neighbourhood of vessels; the appearance of fibroblasts

around the foreign body coincidently with that of uninuclear leucocytes in the neighbouring vessels, and before the appearance of nuclear division, or of other change in the fixed cells of the tissue. The karyokinetic figures are at first met with exclusively in the neighbourhood of the capillaries, and are observed simultaneously both inside and outside the vessels. The dividing nuclei which are subsequently seen further off, may belong to either emigrated leucocytes or to fixed cells. A diminution in the number of the uninuclear cells in the blood retards the formation of fibroblasts around the foreign body. If carmine is injected into the subcutaneous tissue the uninuclear leucocytes in granulation tissue in the peritoneum are found charged with coloured grains, and are seen to be undergoing mitotic division or development into connective tissue. The carmine grains in these cells prove their blood origin.

It is possible that in other conditions the formation of tissue may differ from that given above, which applies only to the inflammatory tissue developed around lamellæ of glass. Under other circumstances, when there are no inflammatory symptoms, the fixed cells may play the chief part. Among the pathological processes which most resemble that studied by the author are to be named the formation of tubercle, sclerous transformations, as those in arterio-sclerosis, cirrhosis of liver, renal sclerosis, and the origin of embryonic cells, such as are met with in the uterine mucous membrane during pregnancy.

From the researches of the author it follows that the evolution of the leucocytes is not always the same. While normally the uninuclear leucocyte develops into the polynuclear cell, in certain pathological conditions it may undergo transformation into a fibroblast, and take part in the formation of connective tissue. The protoplasm and the nucleus augment in volume, the cellular form becomes modified, the structure of the protoplasm becomes fibrillar, and so the leucocyte becomes a connective tissue cell, which helps in the formation of inflammatory tissue.

This paper, which details observations made in the physiological department of the University of Brussels,

contains an extensive bibliography giving 81 references, and is illustrated by two beautifully executed plates, with 13 partly coloured figures. The work is published as one of the "Mémoires couronnés et autres Mémoires publiés par l'Académie Royale de Médecine de Belgique," and was awarded a medal of the value of 1,000 francs.

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*A Critical Period in the Development of the Horse.* By J. C. EWART, M.D., F.R.S. London: Adam and Charles Black. 1897. Pp. 27.

IN this admirable pamphlet Professor Ewart describes the early stages in the development of the horse, and explains why it is that miscarriage is so frequent in the early weeks of gestation in this animal. This is a very serious economic question, as it appears from the evidence obtained by the Royal Commission on Horse-breeding that about 40 per cent. of the mares selected for breeding fail to produce offspring during any given year, and in India the percentage of failure is higher still. A description is given of the foetus and its appendage at four weeks, five weeks, six weeks, seven weeks, and eight weeks, and each stage is illustrated by a well executed figure in the two excellent plates which accompany the text.

Briefly, the embryo is, in the early stages, attached to the uterus by a portion of the yolk-sac which is fused with the outer tunic, and forms a kind of filter through which nutritive matter diffuses from the mother into the sac, and is absorbed by the vessels of this appendage. Around the absorbing area of the yolk-sac a circular adhesive ring is formed, and a girdle-like structure is developed by which the attachment is made still firmer. Up to this, the allantois is small and its surface smooth, and although it may take some part in respiration, it does not yet effect any intimate adhesion to the uterus. But about the seventh week, as the area of absorption of the yolk-sac with its surrounding adhesive structures are growing smaller and smaller, the rudiments of villi appear on the surface of the allantois, and by the end of the eighth week they exist in thousands, and are lodged in uterine pits, from which they draw nourishment, and to which they securely fix the embryo.

The periodic seasons of sexual excitement or œstrum are continued during the earlier stages of pregnancy. At the first of these periods, about the end of the third week, about one-fourth of the embryonic sac adheres to the surface of the uterus; but when the second period occurs at the end of the sixth week, the adhesive region is limited to one pole only. Hence at this period the embryo is more apt to become detached and to "slip" than at the end of the third week. "About the end of the seventh week the supply of nourishment by means of the yolk-sac is coming to an end, and there is perhaps still about this time a hereditary tendency for the embryo to escape." It is at about this stage of development that the opossum leaves the uterus, and finds shelter in the marsupium. "Unless the new and more permanent nutritive apparatus is provided, unless a countless number of villi rapidly sprout out from the allantois, the embryo will die from starvation during the eighth week, and in a few days be discharged. It may, therefore, be taken for granted that there is a certain amount of danger at the end of the third and sixth weeks; but that the most critical period is about the end of the seventh or the beginning of the eighth week, for unless the villi appear in time, and succeed in coming into sufficiently intimate relation with the uterine vessels, the developmental process is of necessity for ever arrested."

In the concluding pages Professor Ewart draws the practical conclusions that follow from his embryological observations, and details the precautions which should be adopted in order to diminish as far as possible the risks to which the foetus is exposed at the critical periods of its development. The pamphlet is written in a most clear and intelligible manner, is admirably illustrated, and cannot fail to interest not only embryologists, but all those concerned in agriculture and horse-breeding.

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*Transactions of the Clinical Society of London.* Volume XXX. London: Longmans, Green, & Co. 1897. Pp. 262.

THIS volume contains accounts of a large number of interesting and important cases, and gives evidence of clinical work

on the part of its members of which any society might well be proud.

We can refer to only a few of the papers. Dr. Hawkins records a remarkable case of pneumonia which recovered, although the temperature had risen on successive days to  $107.4^{\circ}$ ,  $107.4^{\circ}$ , and  $108.4^{\circ}$ . The treatment employed was sponging with iced water and the icepack. Mr. Wallis removed successfully the right kidney of a man who had fallen from a height on some spikes. The organ was almost torn in two by the accident. Dr. David Newman relates a series of important cases in which increased vascular tension in the kidney caused pain, albuminuria, and hæmaturia, and was relieved by surgical treatment. Mr. Lane relates two cases of gastro-enterostomy by means of Murphy's button; one was alive two years after the operation without ever having passed the button; the other died nineteen days after the operation, and the button was found still where it had been placed at the operation. Mr. Stephen Paget has collected records of a number of cases in which voracious hunger or thirst resulted from some brain lesion. Drs. Ewart and Rolleston describe very fully the case of a woman who had symptoms of mitral narrowing, but in whose heart a thrombus was found projecting through the mitral orifice. There are two illustrations of the condition of the orifice. The whole subject is well discussed.

There are many other papers which will well repay perusal. We are glad to see the Society is in a flourishing state.

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*The Guide to South Africa for the use of Tourists, Sportsmen, Invalids, and Settlers.* With coloured Maps, Plans, and Diagrams. Edited annually by A. SAMLER BROWN and G. GORDON BROWN for the Castle Mail Packets Company, Limited. 1897-98 Edition. London: Sampson Low, Marston & Co. Capetown, Port Elizabeth, and Johannesburg: J. C. Juta & Co. 1897. 8vo. Pp. 420.

THIS excellent Guide grows larger each year. But this was only to be expected, having regard to the phenomenal advance of South Africa. The editor tells us in his preface to the edition for 1897-98 that a few fresh subjects have been

introduced, but that the matter already included was of so varied a character that most of what is new has fallen into its proper place under an old heading.

Statistical, historical, and economic information has been revised and amplified, and no pains have apparently been spared to make the work as reliable and comprehensive as possible. Local aid has been freely solicited with this object and as freely given. Hence it is that "Brown's South Africa" has won a wide reputation as a trustworthy and encyclopædic guide-book for invalids no less than for tourists, sportsmen, and settlers.

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*Transactions of the Association of American Physicians.*

Eleventh and Twelfth Sessions. Philadelphia: Printed for the Association. Vols. XI. and XII. 1896 and 1897. Pp. 453 and 510.

THIS is, we think, the most scientific of the Transactions of Medical Societies that we are acquainted with: it certainly is the most beautifully illustrated. We must confess that in the excellence of their illustrations, both in ordinary magazines and especially in medical works, transatlantic publishers surpass those of Europe. The printing, too, and general appearance of the volume leave nothing to be desired.

There are, in Vol. XI., a number of papers on bacteriological subjects. A poison-producing bacillus from ice-cream is very fully described. Dr. Ernst describes a new variety of streptococcus which caused puerperal septicæmia, and which he calls "*Streptococcus aureus liquefaciens*." Several papers treat of diphtheria antitoxin; Dr. Smith writes on "*Varieties of the Bacillus Tuberculosis*." An interesting case of parasitic chyluria from Florida is described, and illustrated with some beautiful microphotographs, showing the failure among the blood corpuscles in an extremely life-like manner.

Dr. Griffith contributes a careful paper on idiopathic fragility of the bones in infancy and childhood. Dr. Weir Mitchell mentions several cases in which the medicinal use of bromides caused severe symptoms such as weak action



of the heart, depression of spirits, or even maniacal outbreaks. Dr. Pepper writes a long and very careful paper on dilatation of the stomach, pointing out that mere alterations in size cannot alone be taken into consideration in making a diagnosis of this condition; the state of the motor powers of the organ should always be determined.

There are many other excellent papers to which want of space prevents us referring.

Volume XII. contains a careful and valuable paper on colitis by Dr. Delafield, of New York, where this disease is very prevalent. He distinguishes five varieties, and discusses the appropriate treatment for each. Dr. Musser relates some interesting cases of angina pectoris. Dr. D. D. Steward describes a form of chronic Bright's disease without albuminuria. Dr. Edes contributes a careful paper on neurasthenia in relation to nutrition, the quality of the blood, and uric acid excretion. Dr. Dock describes some very careful investigations of some cases of cancer, showing that there are more cells showing mitosis in cancerous effusions than in those of tubercular or simple inflammation; a plate shows the appearances of the cells in his cases. Dr. Shattuck gives an interesting paper on pneumonia. He has tapped the pericardium in a number of cases, the notes of each of which are illustrated by diagrams of the thorax, showing the extent of heart-dulness and the place of puncture. Dr. de Schweinitz has succeeded in isolating from cultures of tubercle bacilli certain crystals, a solution of which, when injected into the liver of animals, causes typical caseation. Drs. Stewart and Kelly have an elaborate paper on primary tuberculosis of the kidney.

One of the best papers in the book is by Dr. Osborne on a case of acromegaly, which ultimately proved fatal. Several plates show the skiascopic, and also photographic appearances of the bones, and the microscopic appearances of the thyroid and pituitary glands. There were several remarkable phenomena in this case, the most extraordinary perhaps being the heart which weighed 2lbs. 9oz. In the sella turcica a small celled growth was found, probably sarcomatous.



Dr. Williams with a number of admirable plates shows how the Röntgen rays can give information about the thoracic organs, demonstrating the size and position of aneurysms, the size of the heart, the condition of the lungs in phthisis, pneumonia, &c. He goes so far as to say, "the fluoroscope gives us better assurance that the lungs are in a healthy condition than other methods of physical examination; it enables us to recognise or exclude emphysema; it enables us to make an earlier and more certain diagnosis of aneurism than do other methods of investigation." Whether these statements are borne out by other observers or not, at any rate the paper is well worthy of study by all interested in these rays.

Dr. Osler writes on the abdominal complications of typhoid, and Dr. Rachford contributes a careful paper on the treatment of lithæmia.

There are many other excellent articles. These Transactions will bear favourable comparison with those of any other society we know of.

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*District Nursing on a Provident Basis.* By JAMIESON B. HURRY, M.A., M.D. London: The Scientific Press. 1898.

ANNUS DOMINI 1897 has been a record year in the annals of district nursing, so much of the money collected in commemoration of the Queen's Diamond Jubilee having been devoted to its support among the poor; and we welcome Dr. Hurry's little work as a thoughtful analysis of the subject from a financial point of view. In agricultural, mining and manufacturing centres his suggestions should prove most valuable as a text-book for further development on common-sense principles, for we believe that district nursing on a provident basis is sure footing. Unfortunately, there are few towns in Ireland where we could hope for its support, except as a charitable institution, such as has been instituted by her Most Gracious Majesty, and which has already proved such an inestimable benefit to this country through the forty-four branches of the Queen's Institute already established. To compare the cost of a visit here and in England, as Dr. Hurry does, is not logical, and

we invite him to a more intimate acquaintance with our work and surroundings. In Dublin such work could not be carried to a successful issue among the poor and destitute, for whom it is supported, without a liberal supply of nourishment, medical appliances, dressings, &c., and these all appear in the balance sheet of St. Patrick's Nurses' Home, from which the average of 10d. a visit was drawn in 1896, and to which Dr. Hurry alludes as an *unusual amount*. Tram fares—a serious item where cases are often situated from two to three miles apart—are also included, and these distances, not always on tram lines, account in some measure for the numbers visited not comparing favourably with work done from more compact centres. We ourselves put the character of the nursing before the figures, and feel quite satisfied to know that an average of 11 nurses in St. Patrick's Home have, during the year 1897, paid 36,061 visits to 1,897 patients.

We most cordially recommend these carefully-considered and exhaustive pages to the perusal of those desirous of inculcating the precept of self-help among the wage-earning class.

*Aims and Methods of Education.* By PRIESTLEY SMITH.

Birmingham: Cornish Brothers. 1897. Pp. 40.

A VERY interesting analysis of modern education and a plea for a more rational system. The author approves Herbert Spencer's dictum—"as grammar was made after language, so ought it to be taught after language"—and claims that the same principle should be applied to other studies, and that knowledge and not examination-passing should be the object ahead—a consummation devoutly to be wished; but how is the knowledge to be gauged without the examination?

*Human Nature: its Principles and the Principles of Physiognomy.* By "PHYSICIST." Part I. London: J. & A. Churchill. 1897. Pp. 128.

In the introduction the author echoes Burke's appeal, "that no part of this discourse may be judged of by itself

and independently of the rest." Perhaps this is why it is hard to understand such a paragraph as "Psychology and physiology differ in no important respect; they are to each other much what Human Nature is to physiognomy;" or such a statement as that the sheep, horse, and rabbit, generally speaking, are emotional and excitable animals. When the second part appears these and other problems may be cleared up.

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**RECENT PAPERS ON DISEASES OF CHILDREN.**

1. *The Value of Modified Cows' Milk in Infant Feeding.* By DAVID EVANS, M.D., Montreal.
2. *Transactions of the American Pediatric Society.* Vol. VIII. 1896.
3. *Pediatrics.* Nos. 9, 10, 11, 12. November and December, 1897.
4. *Archives of Pediatrics.* November, 1897.

1. THERE exists in Montreal a *Milk Laboratory*, called "The Walker-Gordon Laboratory Co.," where cows' milk is prepared for the scientific feeding of infants. "Physicians in Montreal can by this means write a prescription for a food with the same certainty that it will be accurately filled as when we write a prescription for an apothecary. These laboratories have the oversight of the feeding and care of the cows, and the handling of the milk, to insure its purity, cleanliness, and freshness. They have trained men to carry out the preparation of the food called for by the prescriptions. At the present time there are about 30,000 infants being fed by these laboratories in the United States and Canada, and they are everywhere giving satisfaction. The average cost is from \$2.10 to \$2.40 per week, which includes bottles and nipples." Dr. Rotch and Dr. Holt, of New York, both speak highly of the value of the laboratory, and Dr. Evans' paper is in support of these institutions.

2. These well-bound neat Transactions contain some interesting papers. There are six contributions on "Diphtheria," especially on antitoxin and intubation. Three papers deal with "Lumbar Puncture" and "Tapping the Vertebral

Canal." Others are on "Abscess of the Brain," "Malignant Endocarditis," "Insanity in Children," "Cerebro-spinal Meningitis," and "Habit Movements" (by W. Oster).

The volume is well worth consulting for information on any of these points.

3. In these journals on Diseases of Children one or two matters of interest appear. A case of tubercular meningitis was reported to "The New York Academy of Medicine" as ending in recovery after lumbar puncture. It does not seem to us absolutely certain that this case actually was tubercular; and it is not impossible that it might have been a form of that most interesting disease, post-basal meningitis, which sometimes terminates favourably. Some good remarks are to be found on "Night-Terrors," and an excellent paper on "Mentally Deficient Children," by Dr. Beach, formerly of Darent.

4. In this New York monthly is an interesting contribution on "Unilateral Tremor" in children, with some valuable remarks by Dr. Rotch. This is often purely a disease of nutrition, and accompanied by emaciation; while many nerve specialists have been erroneously led to attribute it to some organic cerebral disease.

Several papers on "The Milk Dispensaries" of New York teach us much that is of value. Milk is here carefully prepared for the infants of the poor at moderate rates.

*The Practitioner, a Journal of Practical Medicine and Surgery.* Edited by MALCOLM MORRIS. Old Series, Vol. LIX. New Series, Vol. VI. July to December, 1897. London, Paris and Melbourne: Cassell & Company, Ltd. 1897. 8vo. Pp. 684.

THIS sixth volume of the new series of *The Practitioner* maintains the high degree of excellence reached by its predecessors under the able editorship of Mr. Malcolm Morris. Perhaps the most learned and interesting communications in the volume are the biographies of the "Heroes of Medicine," which are continued number after number. The "heroes" immortalised in the present volume are Thomas Wakley, Benjamin Rush, Theophrastus Paracelsus, Theo-

phile Laennec, Theodor Schwann, and Herman Boerhaave, truly a cosmopolitan gathering of celebrities. The portraits of these worthies are for the most part artistic, but we cannot say this of the likeness of the founder and first editor of the *Lancet*, fearless, fighting, honest Thomas Wakley.

It is again our pleasant duty to congratulate Mr. Malcolm Morris on the success of his editorial labours.

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#### ALCOHOL AND VITAL RESISTANCE TO INFECTION.

DR. SIMS WOODHEAD gives (*Medical Temperance Review*, January, 1898) a summary of recent researches on the action of alcohol. An abstract is given of Dr. Abbott's experiments on resistance to infection. Alcoholised rabbits died when inoculated with *Streptococcus pyogenes* and *Bacillus coli communis* in attenuated cultures which did not kill non-alcoholised control animals. Dr. Deléarde, working at the Institut Pasteur at Lille, carried out a series of experiments on rabbits, immunising against, and infecting with the virus of hydrophobia, tetanus and anthrax, giving some of the rabbits alcohol at different stages of the experiments. Dr. Deléarde found that alcohol had the effect of preventing the acquisition of immunity against rabies when alcohol is administered during the period in which the immunising process ought to be going on. With regard to tetanus it was found that animals vaccinated against tetanus, and afterwards alcoholised, lose their immunity against tetanus; and that animals vaccinated against tetanus, and at the same time alcoholised, do not readily acquire immunity. In the case of anthrax it is almost impossible to confer immunity if the animal is alcoholised during the time that it is being vaccinated. From all this Dr. Deléarde draws the practical conclusion that patients who have been bitten by a mad dog should as far as possible abstain from the use of alcohol, not only during the process of treatment, but also for some time afterwards, even for a period of eight months, during which period, apparently, increase of immunity may be going on. Beyond this he maintains that doctors often commit a grave error in administering strong doses of alcohol to patients suffering from certain infectious diseases, such as pneumonia, or from certain intoxications, such as those produced by snake-bite, during which an increase in the number of leucocytes appears to be a necessary part of any process that leads to the cure of the patients.

## **PART III.**

### **MEDICAL MISCELLANY.**

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*Reports, Transactions, and Scientific Intelligence.*

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#### **ROYAL ACADEMY OF MEDICINE IN IRELAND.**

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President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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#### **SECTION OF SURGERY.**

President—SIR WILLIAM THOMSON, President of the Royal College of Surgeons.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

*Friday, November 12, 1897.*

**The PRESIDENT in the Chair.**

#### *Operation in Intestinal Obstruction.*

SIR WILLIAM THOMSON delivered his Opening Address on this subject. [It will be found in Vol. CIV., page 457.]

#### *A Case of Middle-ear Disease.*

MR. ROBERT H. WOODS read a paper on a case of suppurative middle-ear disease, complicated by lateral sinus thrombosis extradural cerebellar abscess, and temporo-sphenoidal abscess. The patient, a male, aged twenty-seven, was admitted to the Hardwicke Hospital suffering from symptoms of typhoid fever. He had had chronic otorrhœa for seven years, the discharge ceasing seven days before admission. Lateral sinus thrombosis was diagnosticated and operation performed. The mastoid antrum was opened and cleared out, and the bony meatus extended back to the groove from the lateral sinus, in which a septic thrombus was found. An extradural abscess on the posterior aspect of the temporal bone was

evacuated. Two days later, symptoms of brain abscess persisting, a second operation was undertaken with the result that a temporo-sphenoidal abscess was tapped and four drachms of pus removed. The patient made an uninterrupted recovery.

THE PRESIDENT congratulated Mr. Woods on the result which had attended his operation. Such cases, so far, had not always been so satisfactory.

SIR THORNLEY STOKER said he rose principally for the purpose of complimenting Dr. Woods. He (Sir Thornley) had seen the case, and could bear testimony to the exact and very modest report which Dr. Woods had made of his work in connection with it.

DR. FINNY asked whether at the time when the pus was being cleared out of the lateral sinus or any abscess, the attention of the surgeon should be then and there directed to the ear with the object of trying to remove any disease there.

DR. FRAZER spoke.

MR. PRATT would like to ask Mr. Woods why he had preferred to use a mallet and chisel.

MR. T. MYLES joined with the others in congratulating Mr. Woods. Mr. Pratt had asked a question about the mallet and chisel. Well, this was one of the first operations of the kind that had been performed, and the equipment now used for the operation was not then to the fore. Mr. Woods had since that operated with a burr.

MR. M'ARDLE said that he had seen Mr. Woods use the mallet and gouge. He, himself, preferred the gouge. There was a great difficulty in guiding the electric burr.

MR. FITZGIBBON said that the question as to the use of the gouge or the use of a burr, or the use of a trephine, must depend to a great extent on what is found after the incision.

MR. LENTAIGNE also spoke.

DR. A. R. PARSONS said that he (Dr. Parsons) would like to know from Mr. Woods what reason he had for believing that, while the patient might have been suffering from abscess of the brain, already general infection of the blood supply had not taken place, and that the patient was not suffering from ulcerative endocarditis.

DR. HARVEY spoke.

DR. R. LANE JOYNT said he would like to ask Mr. Woods when he opened the mastoid bone and exposed the lateral sinus in what state he found the thrombus, and if it was septic at the time. If it was septic, he (Dr. Joynt) supposed that Mr. Woods would have opened the jugular vein in the neck below. Whether the con-

sideration occurred to him that concussion of the brain occurs in the use of chisel and mallet.

MR. CROLY said that he had to join with the previous speakers in offering his congratulations to Mr. Woods.

MR. PATTESON said that there was one point to which he wished to refer, that was as to the advisableness of using the trephine, or the gouge, or the electric burr. He believed that the gouge was an instrument admirably adapted to the purpose, and could be regulated very distinctly, and was altogether a much better instrument than the burr.

MR. WOODS replied. Dr. Joynt had asked what was done with the clot in the lateral sinus. His reply was, that he had cleared out the lateral sinus as far as he could reach it. He did not tie the internal jugular vein, and he thought that, perhaps, it would have been better if he had done so. Mr. Tobin had asked how to deal with the primary fault in the ear. The procedure which he (Mr. Woods) adopted, and the one which he considered the correct one, was Macewen's—first to get at the mastoid antrum, then inspect it after cleaning it out. Mr. Pratt had instituted a question between mallet and chisel and trephine. Well, in these cases, it is comparatively rare, in fact had never occurred to him (Mr. Woods), to find softening of the mastoid bone in cases of intracranial abscess, and he thought that the reason why there was intracranial abscess at all was because the bone was so hard that the pus could not get out, and, therefore, it was precisely in these cases that there was the greatest difficulty in getting through the bone, because there was a sclerosing osteitis set up which eburnated the mastoid process, and made it exceedingly difficult to get through, and it was in these cases that the burr is so useful. The possibility of causing concussion of the brain by blows of the mallet was, he thought, a remote one.

The Section then adjourned.

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*Friday, December 10, 1897.*

The PRESIDENT in the Chair.

1. *Two cases of Tetanus treated by Antitoxin.*

MR. GLASGOW PATTESON read notes of two cases of above. [They will be found at page 104.]

2. *Notes on Tetanus.*

MR. J. KNOX DENHAM read a paper on the above subject.



### 3. *Case of Hydrophobic Tetanus.*

MR. HENRY CROLY read notes on a case of "cephalic" or "hydrophobic" tetanus. The patient, a man aged thirty-five, was thrown to the ground while driving his horse and trap, and sustained severe head injuries, shortly after which he got an attack of tetanus, accompanied by unilateral facial paralysis. Tetanus antitoxin in the form of dried serum was injected hypodermically (one gramme dissolved in two drachms of sterilised distilled water), but did not appear to do any good, so was discontinued after some days. Next treatment was chloral hydrate in drachm doses, night and morning, which lessened the spasms and produced sleep. From this on the spasms grew less daily, the facial paralysis disappeared, and the patient made an excellent recovery.

The PRESIDENT said they were accustomed to look at tetanus as essentially consisting of two groups—one acute, and one rather regarded as chronic. The acute cases come on very rapidly, and run fatal courses usually within a few days; but the chronic cases are hopeful, no matter what treatment is adopted.

MR. HENRY GRAY CROLY related a fatal case of tetanus which occurred last November. The patient was injected with antitoxin. He had tried the antitoxin treatment in more than one case without any benefit whatever. He stated that he had often noticed yawning to be a fore-running symptom of tetanus.

SIR THORNLEY STOKER said that he had seen Mr. Denham's case of tetanus, and he had no doubt whatever that the antitoxin did diminish, or at times even abolish, the spasms. At the same time the patient died. In the application of antitoxin for tetanus it was impossible to say in a given case whether it was the treatment that cured the patient or not. He related an acute case of tetanus which occurred in a boy aged thirteen, with the most frequent and violent spasms he had ever seen, with one exception. He saw the boy on the sixth day after the injury, and after being treated with the rapid exhibition of mercury, and by what completely allayed the spasms—the inhalation of the vapour of nitrite of amyl—recovery took place. Antitoxin treatment was only on its trial, and it was, therefore, very important that a great bulk of cases should be recorded.

MR. MYLES said he had met two cases of tetanus. Both cases recovered. In one case he had used antitoxin. Recovery complete. He thought that the gradually-increasing weight of evidence was in favour of antitoxin, and that no man could feel that he had done his duty in a case if he did not at least give the patient a chance

MR. M'CAUSLAND related a case of tetanus. The patient was struck by the step of a passing car on the legs, and slight wounds were inflicted. He was dressed in Steevens' Hospital and went out. The following day opisthotonos was well marked, and spasms had commenced during the previous night. Under an anæsthetic the skin around the wounds was freely excised, and at the same time an injection of ten c. grammes of French antitoxin was given. At that time he (Mr. M'Causland) gave a very bad prognosis. However, the patient was much better in the evening. A drachm of bromidia every two hours, nourishment, and a large enema were ordered. Only two slight spasms occurred after recovery from the anæsthetic. Recovery was complete in ten days. Mr. M'Causland could not say whether it was the antitoxin or the excision of the skin which had the effect of curing the man.

SIR WILLIAM STOKES said that he had been deeply impressed by the result of the antitoxin treatment in one of Mr. Patteson's cases.

MR. G. JAMESON JOHNSTON would like to ask Mr. Knox Denham if there was any facial paralysis in his case, because Sir William Gowers thinks that the facial paralysis is always accompanied by some lesion of the fifth nerve. He (Mr. Johnston) thought it was more of a passing neuritis which passed up the facial nerve, which became paralysed by pressure in the canal at the time.

MR. LENTAIGNE said he had treated three cases of tetanus with mercury and chloral, and all had recovered, whether as a result of the treatment or not he would not venture to say. He had used the mercury before antitoxin had been discovered, but just after the microbic nature of tetanus had been discovered. He had used it on general principles, and because of its action on the whole system in syphilis and some other affections, all of which were then believed to be probably of microbic origin. The chloral was given in fifteen or twenty grain doses every third hour to relieve spasms, and both drugs were continued so long as any symptoms appeared. The patient was rapidly mercurialised, and then kept under the influence of the drug by small doses; he also kept hot carbolic and sublimate lotions constantly on, and in the neighbourhood of the wound he used a mixture containing 1 in 40 carbolic acid, and 1 in 1,000 or 2,000 corrosive sublimate. He was himself very doubtful as to the value of the antitoxin as at present manufactured, and so also seemed to be the manufacturers in the Pasteur Institute, as he had lately seen a bottle of serum on the label of which it was written that it was of no use for acute tetanus, and could be of use only in chronic tetanus. He considered that the immediate

and efficient application of antiseptics to the wound is most important from a prophylactic point of view.

PROFESSOR BENNETT drew attention to the fact that Mr. Colles had recommended turpentine as the proper local antiseptic for a tetanus wound.

DR. FINNY remarked on the tendency at the present day to overrate treatment by serum and antitoxin.

MR. PATTESON, replying, said he had employed fluid serum prepared at the Pasteur Institute. Dried serum was also made, and had the advantage of retaining its properties better. In his cases the wounds had been carefully scraped and strongly cauterised, but he did not think that much could be gained by excising the wound where the symptoms had already developed. He said that he would not like to trust to mercury as a treatment for tetanus.

MR. M'CAUSLAND said that in his case the wounds had not been excised till six hours after the symptoms had manifested themselves.

MR. KNOX DENHAM, replied.

MR. HENRY CROLY replied.

After some further remarks,

The Section adjourned.

## SECTION OF OBSTETRICS.

President—F. W. KIDD, M.D.

Sectional Secretary—J. H. GLENN, M.D.

*Friday, November 26, 1897.*

The PRESIDENT in the Chair.

### *Specimens Exhibited.*

DR. HENRY JELLETT.—A solid ovarian tumour and small sub-peritoneal myoma of the uterus. Patient was fifty years of age. On examination the cervix was found protruding from the vulva; a freely movable tumour about three inches in diameter, was found in Douglas's pouch, and could be raised to the umbilicus with ease; pedicle and ovarian ligament could be felt; also a small nodule, the size of a walnut, on the right cornu of the uterus. Coeliotomy was performed, tumour removed, uterus incised, and myoma enucleated, the incision was closed by catgut sutures, and abdominal hysteropexy performed. Patient made a good recovery.

THE SECRETARY exhibited for DR. W. J. SMYLY—(a) Three uteri removed by morcellation for myoma. One of these patients had spent some months in the Royal Hospital for Incurables, being

supposed to be suffering from inoperable cancer; she was in very bad health from constant hæmorrhage, and had a very foetid discharge. Upon removal there was no cancer found in the uterus, but a sloughing myoma. All the patients made good recoveries, and are now in good health. (b) Uterus removed by vaginal hysterectomy for carcinoma. In this case, which was of carcinoma of the body of the uterus, the diagnosis was confirmed by microscopical examination, and the uterus removed by vaginal hysterectomy. She is now in good health and likely to remain so, as the prognosis in such cases is very much better than in cervical cancer.

DR. T. HENRY WILSON.—(a) Two specimens of cervical myoma. (b) Case of pyosalpinx complicated by ovarian and parovarian cysts. Referring to the two cases of cervical myoma, Dr. Wilson stated that on making a vaginal examination in the first case he found a large nodular mass, which bled freely on the slightest manipulation; anterior and to the left of this the thinned out edge of the cervix could be felt, but on the right and posterior it was continuous with the tumour. The uterus was slightly over three inches in length; it was found possible to pass the finger through the external os and above the tumour, but not through the os internum; at first it was considered possible to dissect out the myoma and to leave the mucous membrane covering the vaginal cervix intact, but finding that the wound thus left would have been most difficult to close, he excised the portion of the cervix forming the base of the tumour, and stitched up the wound as in an Emmet's operation. The second case was unlike the first, as she had been complaining for the past four years, of blood-stained watery discharge, with menses every two weeks, and lasting six days. On examination, a small hard mass the size of an orange was felt protruding through the os externum; the os internum was patent, admitting No. 8 Hegar. Body of uterus apparently normal; os externum grasped the tumour. The myoma was removed by torsion and the enlarged cervical cavity packed with gauze.

DR. E. HASTINGS TWEEDY.—(a) Ovarian cyst with adhesions. (b) Fibrous polypus.

DR. ALFRED J. SMITH.—(a) Three large fibro-myomata, which he removed for rapid increase in size from patients aged thirty-five, forty-seven, and forty-five respectively. He ligatured the ovarian arteries directly, then, having separated the bladder from the tumour until he could see the uterine arteries, he ligatured these and separated the tumour by a wedge-shaped incision at the junction of the vaginal portion with the portio media of the cervix; the peritoneum was then stitched over the remains of the cervix,

which was thus left completely retroperitoneal. Recovery in all. (b) A large fibro-myomatous uterus removed by panhysterectomy; recovery. (c) A large fibro-myoma of the uterus removed by myomectomy; recovery. (d) Nine ovarian tumours; all recoveries. (e) Case of pyosalpinx removed by coeliotomy from a patient who had had a severe attack of puerperal septicæmia; recovery.

DR. JELLETT showed for DR. R. D. PUREFOY.—(a) Five myomatous uteri removed by panhysterectomy. (b) One myomatous uterus removed by vaginal morcellement. (c) One myomatous uterus removed by myomeetomy. (d) One fibro-cystic myoma removed by supra-vaginal amputation. (e) One fibro-cystic myoma removed by panhysterectomy. (f) One carcinoma of the cervix removed by vaginal hysterectomy. (g) One carcinoma of the cervix and myoma removed by vaginal hysterectomy. (h) One dermoid of the ovary removed by colpotomy. (i) Three cases of ectopic gestation treated by coeliotomy. (j) Four cases of ovarian cystic tumours: coeliotomy. (k) Two cases of ovaries and tubes removed for salpingitis, &c.; coeliotomy. (l) Two cases of multilocular ovarian cysts; coeliotomy. (m) One case of hydrosalpinx; coeliotomy. (n) One parovarian cyst; coeliotomy.

DR. JELLETT also showed for DR. PUREFOY a case of ruptured tubal pregnancy. Patient admitted to Rotunda Hospital, August 12, 1897. Last pregnancy was March 12, 1897. Stated she was unwell seven weeks after delivery, then amenorrhœa for two months, followed by hæmorrhage and bearing down pains, and after this had seen nothing since July. Complained upon admission of pain in the back, iliac regions, and of dysuria. An irregular tumour filled Douglas's pouch; uterus was not considered enlarged. Her general condition was bad, and operation was deferred until August 31. *Operation*—Uterus was found enlarged to about three and a half months' pregnancy; the tumour in the posterior *cul-de-sac* was adherent, and on removal proved to be a tube distended with blood; as it was thought possible the enlargement of the uterus might be myomatous, the other tube and ovary were removed. Patient left hospital September 28, and the uterus was then the size of a five months' pregnancy; she was subsequently delivered of a premature child on October 22. On microscopic examination the tube was found to contain remains of a foetus and placental tissue.

*Some Points of Living Interest to the Teacher of Gynecology and Obstetrics.*

The PRESIDENT delivered an Introductory Address on this subject. [It will be found at page 7.]

DR. MORE MADDEN proposed that the best thanks of the Academy be returned to the President for his admirable Address, and that the same be printed in the Transactions of the Academy.

Seconded by DR. ALFRED J. SMITH.

*Ruptured Tubal Pregnancy.*

DR. ALFRED SMITH read notes on a case of above. [They will be found at page 23].

The PRESIDENT, in remarking on Dr. Purefoy's case of ruptured tubal pregnancy, said that one point of interest was the occurrence of extra-uterine pregnancy, presumably within a very short time after the patient's previous pregnancy. Certainly it was his (the President's) idea that a good many authorities had laid stress on the fact that there usually existed a long period of sterility before extra-uterine pregnancy occurred.

MR. M'ARDLE, in referring to the specimen exhibited by Dr. Jellett for Dr. Purefoy, asked why he had delayed in dealing with the abnormal condition of things. Was it anxiety to allow pregnancy to go on further in the uterus, or was it that the low vitality of the patient frightened him from performing the operation? He (Mr. M'Ardle) thought that in an operation that need not be long, laparotomy was not contra-indicated in the very lowest state of vitality so long as there was no sepsis present. He believed laparotomy to be one of the least harmful of operations when properly conducted, because he had seen patients recover after laparotomy who certainly would not have recovered after operations on the limbs. With regard to Dr. Smith's case, he (Mr. M'Ardle) had assisted him at the operation. What struck him about the operation for ruptured tubal pregnancy was that there was a great deal dependent upon the rapidity with which the broad ligament was secured, and a point of great surgical importance was the clamping of the broad ligament by the two hands until the blood-clot was removed. He was struck at the method by which Dr. Smith grasped the broad ligament along the pelvic walls until the abdominal cavity was thoroughly freed of blood-clot, and enabling him exactly to secure the point of rupture.

DR. MORE MADDEN said that both Dr. O'Donnell and Dr. Smith deserved the greatest credit for the way in which they had conducted the case. As to the cause of the tubal pregnancy, that was an interesting question. Why should a woman who had been so prolific before have a tubal pregnancy instead of a uterine? Was it that the woman had been suffering from an attack of endometritis, and that the uterine end of the Fallopian tube had become blocked in some way by some inflammatory exudation?

DR. E. HASTINGS TWEEDY said that a new operation—

colpotomy—for tubal pregnancy had recently been made popular. He had never seen colpotomy performed for this condition, and would like to know if Dr. Smith had ever performed it, and what he thought of the operation as compared with the abdominal method. In his opinion the abdominal method was accompanied with more shock. Mr. M'Ardle had remarked on the safety of abdominal section. This, of course, was quite right, but at the same time there is great shock when the abdomen is opened and the intestines handled, whereas there is little or no shock by the vaginal method. He thought that Dr. Smith's case would have been a favourable one for anterior colpotomy. With regard to Dr. Jellett's case, Dr. Jellett had remarked that he tied the tube and ovary and cut it away, fearing that the tumour in the uterus might be a soft myoma. He (Dr. Tweedy) thought that Mr. Lawson Tait had pointed out that soft myomata are unfavourable for the operation of ovariectomy, and under those circumstances, if Dr. Jellett had been dealing with a soft myoma, it was probable that no good had been done by cutting away the tube, and if the uterus was pregnant, he thought it was doing harm to cut out the tube and ovary.

DR. SMITH, replying, said he had first to ask if Dr. Jellett had noticed any rhythmical contractions in the tumour or uterus during examination; this would assist in the diagnosis of pregnancy. In answer to Dr. More Madden, he (Dr. Smith) could not say if there had been any history of endometritis. With regard to Dr. Tweedy's question about colpotomy, he (Dr. Smith) had never performed the operation. He was sure it had all the advantages claimed for it by those who advocated it. He had never had any difficulty or bad result in treating cases by abdominal section. He had therefore no reason for changing a method which had done him such good services.

DR. JELLETT said, in answer to Mr. M'Ardle, that the patient was not operated upon immediately because the case was not diagnosticated as a ruptured tubal pregnancy, and, as the operation proved, was not one such as Dr. Smith had described, but rather a hæmatoma of the broad ligament accompanied by a very small pelvic hæmatocele, the formation of which had been a more or less chronic and not an acute process. Again, when first seen, the patient was suffering, not from the effects of hæmorrhage, but from general malnutrition. In answer to Dr. Tweedy, he thought that castration often did not check hæmorrhage coming from a large soft myoma, but he did not know that if a small soft myomatous uterus had its appendages removed at an early date, there were any statistics to prove that it continued to increase in size.

The Section then adjourned.



## SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.

Sectional Secretary—E. J. McWEEENY, M.D.

*Friday, December 3, 1897.*

The PRESIDENT in the Chair.

*Intra-ocular Tumours.*

MR. A. H. BENSON explained that owing to the illness of Professor Scott he was not yet in a position to lay two of the three cases before the Section that evening, and proceeded to say:—

The third case which I show is one of some interest, as showing how a foreign body can become encapsuled within the globe.

R. D., a man, aged sixty-nine, from County Wicklow (Reg. No. 416), was admitted to St. Mark's Hospital, November 9th, 1897.

*History.*—He stated that fourteen years previously he had been struck by a splinter of iron in his left eye, in the forge (he is a blacksmith); that the eye had become blind, but that it had been no annoyance or pain to him until very recently, when it got red, inflamed, and terribly painful. When I first saw him the left eye was very painful, tension  $+1$  or more, and vision  $=0$ . There was considerable zonular vascularity, and no illumination of the fundus could be obtained. There was iridodonesis, probably due to dislocation of the lens, and through the transparent cornea could be seen, in the anterior chamber, apparently floating about in the aqueous, a little spongy-looking mass, about 2 mm. in diameter, and of rusty colour. This can still be seen in the hardened eye through the transparent cornea, as the specimen is preserved in a 1 per cent. formol solution.

On examination I could find no nebula on the cornea, or mark on the sclerotic indicating that any foreign body had ever penetrated the globe. The eye was enucleated, because it was blind and very painful; and it was only on looking at the globe after its removal, that I saw the little black hemispherical tumour on the sclerotic, about the size of a grain of number one shot. This I took to be a sarcoma protruding through the sclerotic, forgetful of or discrediting the history of the injury fourteen years ago. I took it that this tumour was the first beginning of an intra-ocular sarcoma, working its way through the sclerotic, and that the high tension and pain were those that usually occur in sarcomata at a certain stage.



The globe, *unopened*, was hardened in 1 per cent. formol, and given to Professor Scott with the others, and it was only when he tried to make a section of the tumour that he found that it was by far the hardest tumour he had ever tried to cut, and no wonder, for it contained in its centre a mass of iron, which must have lain buried in the eye (encapsuled as you will see) for fourteen years.

The symptoms were, therefore, not due to a sarcoma, but to a foreign body encapsuled in the sclero-choroidal layers, and the tumour which protruded from the surface of the sclerotic was but the thinned and pigmented wall of the capsule which contained the iron, and on the inside of the globe a corresponding protrusion of the choroid was visible.

The iron has not changed to rust, and still retains, after fourteen years, its magnetic qualities.

The SECRETARY (Prof. McWeeney, M.D.) stated that his colleague Mr. Werner, had had under treatment, at the Mater Hospital, the three cases which stood in his name.

By permission, MR. WERNER then gave the following details of three remarkable cases of neoplasm occurring in the eye or its neighbourhood:—

#### *Sarcoma of Choroid.*

Patient, a lady, aged fifty. Three years ago noticed print "muddled," and could not see people's faces with the right eye. Later, could see only half figure, and finally not at all. The eye became blind, but gave her no trouble until July last, when it became very painful and bloodshot; pain was so severe that she could not sleep; this lasted for a couple of days and then passed off. Has had slight attacks since. I saw her on September 26th; the eye was glaucomatous, no p. l., widely dilated pupil, with ectropion of iris pigment, shallow anterior chamber. Ophthalmoscopic examination—Large oval-shaped smooth detachment of retina, covering disc and macular region and lower part of fundus; there were no folds except a few narrow ones at edges. The colour was yellowish, and there appeared to be vessels under the retina. Some hæmorrhages on upper surface. I diagnosticated sarcoma of choroid and advised enucleation.

On opening the eye, a brown oval tumour was seen at lower part of fundus, with shallow detachment of retina where it sloped off the tumour. Transverse section showed it to consist of two portions united by a narrow neck, the base being flattened, and the upper part more or less globular and overhanging the surrounding parts like a fungus. Microscopically it proved to be a spindle-

cell sarcoma, with scattered patches of pigmentation. The iris was adherent to the cornea in a large portion of its extent. The ectropion of the uveal pigment was shown in a very remarkable way by the sections prepared by the Secretary.

*Glioma of Retina.*

Patient, a boy, aged three years. Mother has four children older and one younger, and all have healthy eyes except patient. One year ago she noticed a white shining appearance in the pupil of the child's right eye, and four months ago the eye began to enlarge, and increased to its present size.

1st October, 1897.—The eye was enormously enlarged and embedded in a solid growth, with exception of cornea and upper portion of sclerotic, and protruded between the lids which could not be closed; the lower part of bulbar conjunctiva was thickened, ulcerated and bleeding.

The eye was hard and glaucomatous, and in the dilated pupil a yellowish white reflection could be seen through the clear lens. The child was sickly looking and drowsy.

I removed the eye and tumour, and scraped out orbital contents in the hope of preventing formation of a "fungus hæmatodes." The child improved in health remarkably, but was taken away before I had an opportunity of examining the other eye.

22nd November.—I received a letter to say that child could not leave his bed, was vomiting and refused food. The tumour was growing out from the socket again, and that the left eye seemed blind. A vertical sagittal section showed that the right eye and tumour formed one solid mass. The only remains of the intra-ocular contents were the clear lens, pressed up against the cornea, and a dark line of pigment detached from the sclerotic behind. The sclerotic was perforated by the growth below and in front.

The SECRETARY said that the microscopical appearances were very remarkable, all the structures being quite obliterated by the new growth of small, crowded cells. The processes so characteristic of glioma cells could not be made out in the fixed preparation and there was hardly any protoplasm round the nuclei which were actively dividing, mitoses being visible in every field. Large area had undergone a sort of cheesy necrosis, and micro-organisms appeared to have gained access to these areas.

*Myxo-Sarcoma of Lacrymal Gland.*

Patient, a man, aged thirty-five, had received a blow of a snow-ball on the left eye, eighteen years ago. Four months ago, the eye

became prominent, and a growth appeared under the upper lid. The globe was gradually protruded and pushed downwards and inwards. There was moderate optic neuritis, and  $V=F$  at 2 m. The tumour was smooth, solid, and elastic. After removal of the tumour, the eye returned to its place, and vision greatly improved.

The microscopic appearances were described by the SECRETARY, who said that the growth was very puzzling in character, and would probably be described in Germany as *Sarcoma carcinomatodes*. Parts were in a state of advanced mucoid change. It was separated from the lacrymal gland by a fibrous septum.

PROFESSOR BENNETT, in referring to Mr. Benson's case, said that it reminded him of a case formerly under his care. A man came to hospital with a tumour on his forearm, which was rather recent in development. On making an incision, a soft mass of organised tissue sprang into the incision, and the tumour seeming to be then sarcomatous, both he and his colleagues thought it best to amputate through the elbow. Fortunately, however, on passing his finger into the wound, it grated against something, and a long needle having been taken out, the "sarcoma" immediately disappeared.

MR. J. B. STORY thought that Mr. Benson's case showed the mischief done to an eyeball by a foreign body consisting of iron. It was well known, he said, that a perfectly aseptic piece of iron in the eyeball, sooner or later, leads to changes which terminate in the complete abolition of sight, and in the destruction of the interior tunics and contents of the globe. Chemical changes occur and set up chronic inflammatory changes which result in the deposition of iron pigment all through the contents of the globe, the iron pigment even makes its way into the interior of the lens. Certain chemical reactions serve to distinguish this pigment from the ordinary pigment in the eye. The iron pigment reacts with ferrocyanide of potash and hydrochloric acid in a way in which ordinary intra-ocular pigment does not. Also, the latter pigment is bleached by chlorine gas, whereas iron pigment does not react in the same way to chlorine.

MR. MAXWELL spoke.

MR. BENSON, replying, said it was a remarkable fact that after fourteen years the eye had undergone so little apparent change after the introduction into it of a piece of iron. There was very little appearance of rust about the iron, and it still attracted a magnet, and, therefore, had not undergone much chemical change.

The SECRETARY, replying, said that with regard to the siderosis reaction, he quite agreed with Mr. Story. With the cyanide re-

action, one should get a reaction with the introduced iron; whereas, it was well known that the pigment of the choroid would not give any reaction; so, accordingly, it should be a very interesting experiment to try.

MR. WERNER, replying, said that the prognosis in those cases of glioma of the retina was not so bad as Mr. Story had remarked. Cases were on record where, after removal of both eyes, the patient had lived. Two forms of glioma were to be distinguished; one growing from the retina inwards towards the vitreous humour, and one growing outwards into the choroid; distinguished as endophytic and exophytic. Even where the tumour was large and intraocular, if endophytic, the prognosis is much better.

#### *Hydatid Cysts.*

The SECRETARY showed two hydatid cysts, one from the lower lobe of the left lung, and the other from behind the right lobe of the liver; they had occurred in a girl, aged twenty, resident in Dublin, a patient of his colleagues, Dr. Boyd and Mr. Chance, at the Mater Misericordiae Hospital. Though large, the cysts gave rise to no symptoms during life, but after death from disseminated tuberculosis, were found at the autopsy by the exhibitor. Numerous "brood-capsules," full of scolices, were attached to the cyst walls, and preparations of some of these were now demonstrated.

#### *Infective Endocarditis and Villous Pericarditis.*

DR. J. B. COLEMAN exhibited two specimens of morbid hearts, illustrating infective endocarditis and villous pericarditis respectively. The first occurred in a girl, aged twenty years, who had rheumatic fever four years ago. On admission to hospital, last August, she had hæmoptysis, dyspnoea; temperature, 104° F.; pulse, 120; a loud mitral regurgitant murmur. Acute infective endocarditis was diagnosticated, and from the fact that there was considerable hypertrophy of the heart, and that the patient had suffered from rheumatic fever four years ago, it was considered probable that the present acute attack was grafted on a chronic valvular lesion. The patient rapidly became very anæmic and prostrate, with hectic temperature, profuse sweats, and she died three weeks after admission to hospital. The heart, which was exhibited, showed some dilatation and hypertrophy of the left ventricle, on the endocardial lining of which vegetations could be seen. Some of the muscoli papillares were ruptured, and the cusps of the mitral valve were ulcerated, puckered, retracted, and covered with vegetations, which were also present in the endocardium of the

left auricle. Microscopic sections (prepared in Dr. McWeeney's laboratory by Dr. Dargan) through a vegetation on the wall of the left auricle, showed large masses of streptococci towards the surface of the vegetation.

The second specimen showed the typical appearance of villous pericarditis. It was taken from a girl, aged nineteen years, who was admitted to hospital last September, with right basal pneumonia. On the fifth day of her illness she developed left pleurisy and pericarditis. Pneumococci were found in the villous-like projections of lymph covering the pericardium.

The SECRETARY in referring to the vegetations on the heart said, he had never seen anything more remarkable than the way in which infection had taken place by streptococci. The section showed their distribution in a singularly beautiful way. A regular line or streak of cocci extended within about a millimetre of the free margin of the vegetations, and from that solid line of cocci the micro-organisms advanced towards the free surface in solid masses, shaped something like a sausage, and from the apices of these solid masses individual lines of cocci could be seen going forward to the free surface. It appeared to him to be a case of streptococcal infection of the endocardium.

MR. MYLES asked if there was any evidence of secondary emboli in this case of infective endocarditis. In what way was a positive diagnosis of infective endocarditis made during life?

DR. COLEMAN replying said, he had made the diagnosis of infective endocarditis on the grounds simply that the girl had rheumatic fever four years ago, and on admission to hospital she had evidences of severe endocarditis—high temperature, some sweating, and there was no other symptom that could have accounted for her condition. In this case, the infective endocarditis would appear to have been grafted on to an old case of endocarditis. No further examination was made beyond the removal of the heart, and no other emboli were found except that there were infarcts in the lungs, which might be taken as evidences of emboli.

#### *Unruptured Aneurysm of left Ventricle.*

MR. J. BURGESS showed a specimen of the above. [The notes of the case will be found at page 119.]

The SECRETARY said that the specimen was a very rare and interesting one. He thought there could be no reasonable doubt but that the condition of the coronary arteries had really been one of the principal causes of the weakening of the wall of the heart. The coronary artery of that side went directly to the very place

where the commencement of the aneurysm was situate, and transverse section of the coronary artery showed that the lumen was enormously encroached upon. The outside thickness of the vessel was rather greater than normal, whereas, the aperture through which the blood had to go did not admit of anything larger than a pin being passed through. The great thickening in the wall appeared to consist almost entirely of a proliferation of the intima. Were it not for the history, he should almost have been inclined to look upon the arterial disease as of syphilitic nature.

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#### THE SANITARY INSTITUTE.

THE Council of the Sanitary Institute have accepted an invitation from the Lord Mayor and City Council of Birmingham to hold its Seventeenth Congress and Exhibition in that City in September next.

#### SPASMODIC WRY NECK.

At a meeting of the British Orthopædic Society, held in London, on Friday, November 5th, Mr. Noble Smith read a paper upon this subject. Out of eighteen cases which he had treated, he had operated upon eleven by excision of a piece of the spinal accessory nerve, and in eight of these cases he had been obliged also to operate upon the cervical nerves. In all the eight patients he had removed portions of the second, third, and fourth external branches of the posterior cervical nerves. In the three cases in which he had not performed this latter operation, two of the patients were for the present sufficiently contented with the results obtained by division of the spinal accessory alone. In the third case, although the sterno-mastoid was absolutely paralysed by the first operation, the patient said she did not realise any benefit, and could not be persuaded to submit to a completion of the treatment by operation on the posterior cervical nerves, but it was stated that this patient had firmly made up her mind before anything was done that no treatment would relieve her. Mr. Noble Smith contended that, considering the almost uniform success of the double operation, this treatment could now be considered as a well-established and reliable method.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ;  
F.R.C.P.I. ; F. R. Met. Soc. ;  
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

## VITAL STATISTICS

*For four weeks ending Saturday, January 1, 1898.*

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Dec. 11	Dec. 18	Dec. 25	Jan. 1		Dec. 11	Dec. 18	Dec. 25	Jan. 1
Armagh -	7·0	14·0	28·0	28·0	Lisburn -	25·7	12·8	8·5	12·8
Ballymena -	16·9	16·9	5·6	33·8	Londonderry -	20·4	33·0	28·3	28·3
Belfast -	21·5	26·9	21·7	25·6	Lurgan -	4·6	31·9	27·4	18·2
Carrickfergus -	11·7	29·2	5·8	11·7	Newry -	24·1	32·2	12·1	24·1
Clonmel -	39·0	14·6	14·6	9·6	Newtownards -	5·7	34·0	28·8	39·7
Cork -	27·0	31·1	20·1	25·6	Portadown -	37·1	12·4	24·7	30·9
Drogheda -	19·0	26·6	22·8	34·2	Queenstown -	5·7	11·5	23·0	17·2
Dublin -	24·8	27·4	21·2	32·2	Sligo -	20·8	30·5	5·1	35·5
Dundalk -	16·8	25·1	8·4	20·9	Tralee -	16·8	11·2	11·2	28·0
Galway -	22·7	41·5	11·3	22·7	Waterford -	25·9	21·9	2·0	39·8
Kilkenny -	0·0	42·5	4·7	23·6	Wexford -	22·6	22·6	18·1	22·6
Limerick -	9·8	19·6	19·6	28·1					

In the week ending Saturday, December 11, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 21·8), was equal to an average annual death-rate of 20·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·2 per 1,000. In Glasgow the rate was 20·9. In Edinburgh it was 18·0.

The average annual death-rate represented by the deaths registered

during the week in the twenty-three principal town districts of Ireland was 22·0 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in sixteen of the districts to 4·9 in Clonmel—the 8 deaths from all causes registered in that district comprising 1 from diarrhoea. Among the 116 deaths from all causes registered in Belfast are 1 from measles, 2 from scarlatina, 2 from whooping-cough, 2 from diphtheria, 6 from enteric fever, and 2 from diarrhoea. The 39 deaths in Cork comprise 2 from diarrhoea. The Registrar for Tralee No. 2 District remarks—“Scarlatina very prevalent in district, also a few cases of typhoid; two cases of varicella (chicken-pox); whooping-cough also prevalent.”

In the Dublin Registration District the registered births amounted to 157—81 boys and 76 girls; and the registered deaths to 171—84 males and 87 females.

The deaths, which are 14 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·5 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 24·8 per 1,000. During the forty-nine weeks of the current year, ending with Saturday, December 11, the death-rate averaged 29·1, and was 2·4 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 19, being 3 below the average for the corresponding week of the last ten years, and 5 under the number for the previous week. The 19 deaths comprise 4 from scarlatina, 1 from influenza, 1 from diphtheria, 7 from enteric fever, 2 from diarrhoea, and 1 from dysentery.

The number of cases of scarlatina admitted to hospital was 32, being 4 under the admissions in the preceding week and 7 under the number for the week ended November 27. Thirty-one scarlatina patients were discharged, 3 died, and 160 remained under treatment on Saturday, being 2 below the number in hospital at the close of the preceding week. This number is exclusive of 30 patients at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The weekly number of cases of enteric fever admitted to hospital, which had gradually declined from 44 in the week ended November 13, to 16 in the week ended December 4, rose to 30. Twenty-one



patients were discharged, 2 died, and 172 remained under treatment on Saturday, being 8 over the number in hospital on that day week.

Thirty-six deaths from diseases of the respiratory system were registered, being 1 over the number for the preceding week, but 10 under the average for the 49th week of the last ten years. They comprise 27 from bronchitis and 5 from pneumonia.

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In the week ending Saturday, December 18, the mortality in thirty-three large English towns, including London (in which the rate was 21·0), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·3 per 1,000. In Glasgow the rate was 21·0 and in Edinburgh it was 19·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 26·8 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in seventeen of the districts to 16·1 in Newry—the 8 deaths from all causes registered in that district comprising 2 from whooping-cough and 2 from diarrhoea. Among the 145 deaths from all causes registered in Belfast are 1 from measles, 3 from whooping-cough, 11 from enteric fever, and 5 from diarrhoea. The 45 deaths in Cork comprise 2 from measles and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 161—76 boys and 85 girls; and the registered deaths to 191—95 males and 96 females.

The deaths, which are 1 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·5 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 27·4 per 1,000. During the fifty weeks of the year 1897, ending with Saturday, December 18, the death-rate averaged 29·1, and was 2·4 over the mean rate in the corresponding period of the ten years 1887–1896.

Twenty-two deaths from zymotic diseases were registered, being 1 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the previous week. They comprise 4 from scarlet fever (scarlatina), 1 from influenza, 2 from whooping-cough, 2 from diphtheria, 10 from enteric fever, and 1 from diarrhoea.

The weekly number of cases of scarlatina admitted to hospital further declined to 25. Twenty-one scarlatina patients were discharged, 2 died, and 162 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week. In addition, 30 convalescents remained under treatment at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 28, being 2 under the admissions in the preceding week. Twenty-four patients were discharged, 4 died, and 172 remained under treatment on Saturday, being equal to the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 34, being 17 below the average for the corresponding week of the last ten years and 2 under the number for the previous week. The 34 deaths comprise 21 from bronchitis and 9 from pneumonia.

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In the week ending Saturday, December 25, the mortality in thirty-three large English towns, including London (in which the rate was 18.1), was equal to an average annual death-rate of 17.7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18.6 per 1,000. In Glasgow the rate was 20.7, and in Edinburgh it was 15.5.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 19.8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1.6 per 1,000, the rates varying from 0.0 in nineteen of the districts to 7.9 in Londonderry—the 18 deaths from all causes registered in that district comprising 3 from whooping-cough, 1 from enteric fever, and 1 from diarrhoea. Among the 117 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from whooping-cough, 2 from diphtheria, 6 from enteric fever, and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 128—65 boys and 63 girls; and the registered deaths to 146—62 males and 84 females.

The deaths, which are 47 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21.8 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 21.2 per

1,000. During the fifty-one weeks of the year 1897, ending with Saturday, December 25, the death-rate averaged 28·9, and was 2·2 over the mean rate in the corresponding period of the ten years 1887-1896.

The number of deaths from zymotic diseases registered was 18, being 6 under the average for the corresponding week of the last ten years, and 4 under the number for the previous week. The 18 deaths comprise 3 from scarlet fever (scarlatina), 2 from influenza and its complications, 1 from diphtheria, 5 from enteric fever, 4 from diarrhoea, and 1 from erysipelas.

Thirty cases of scarlatina were admitted to hospital, being 5 in excess of the admissions in the preceding week. Thirty-one scarlatina patients were discharged, 1 died, and 160 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week. This number does not include 26 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 15, being 13 under the admissions in the preceding week, and 15 under those in the week ended December 11. Thirty-seven patients were discharged, 3 died, and 147 remained under treatment on Saturday, being 25 under the number in hospital on that day week.

The hospital admissions included, also, 2 cases of typhus—the only cases of this disease in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 80, being 4 under the number for the preceding week, and 16 under the average for the 51st week of the last ten years. The 80 deaths consist of 20 from bronchitis and 10 from pneumonia.

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In the week ending Saturday, January 1, the mortality in thirty-three large English towns, including London (in which the rate was 27·6), was equal to an average annual death-rate of 24·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·1 per 1,000. In Glasgow the rate was 24·3, and in Edinburgh it was 26·7.

The average annual death-rate in the twenty-three principal town districts of Ireland was 28·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in fifteen of the districts to 7·6 in Drogheda—the 9 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from whooping-cough.

Among the 188 deaths from all causes registered in Belfast are 1 from whooping-cough, 2 from diphtheria, 6 from enteric fever, and 4 from diarrhoea. The 18 deaths in Londonderry comprise 2 from whooping-cough and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 247—122 boys and 125 girls; and the registered deaths to 228—119 males and 104 females.

The deaths, which are 18 over the average number for the corresponding week of the ten years 1887–1896, represent an annual rate of mortality of 33·3 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 32·2 per 1,000. During the fifty-two weeks of 1897, the death-rate averaged 29·0, and was 2·2 over the mean annual rate for the ten years 1887–1896.

Twenty deaths from zymotic diseases were registered, being 2 over the number for the preceding week, but 4 under the average for the 52nd week of the ten years 1887–1896. They comprise 1 from measles, 1 from scarlet fever (scarlatina), 3 from influenza and its complications, 2 from whooping-cough, 2 from diphtheria, 1 from ill-defined fever, 5 from enteric fever, 1 from diarrhoea, and 1 from erysipelas.

Thirty-seven cases of scarlatina were admitted to hospital, against 30 in the preceding week, and 25 in the week ended December 18. Eighteen scarlatina patients were discharged, and 179 remained under treatment on Saturday, being 19 over the number in hospital at the close of the preceding week. This number is exclusive of 26 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital rose to 22. Thirty-three patients were discharged, 1 died, and 135 remained under treatment on Saturday, being 12 under the number in hospital at the close of the preceding week.

The hospital admissions for the week included also, 2 cases of measles—the only cases of the disease in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered was 54, being 24 over the number registered during the preceding week, but one under the average for the 52nd week of the ten years 1887–1896. The 54 deaths comprise 36 from bronchitis and 14 from pneumonia.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of December. 1897.*

Mean Height of Barometer, -	-	-	29·751 inches.
Maximal Height of Barometer (on 21st, 9 p.m.),	30·555	„	
Minimal Height of Barometer (on 29th, 11 p.m.),	28·740	„	
Mean Dry-bulb Temperature, -	-	-	44·1°
Mean Wet-bulb Temperature, -	-	-	42·1°.
Mean Dew-point Temperature, -	-	-	39·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·247	inch.	
Mean Humidity, -	-	-	85·2 per cent.
Highest Temperature in Shade (on 27th),	-	-	57·8°.
Lowest Temperature in Shade (on 3rd),	-	-	32·9°.
Lowest Temperature on Grass (Radiation) (on 22nd),	-	-	27·9°.
Mean Amount of Cloud, -	-	-	54·9 per cent.
Rainfall (on 18 days), -	-	-	1·841 inches.
Greatest Daily Rainfall (on 5th), -	-	-	·261 inch.
General Directions of Wind, -	-	-	S. W., S., W.

*Remarks.*

A changeable, open month, with frequent but not heavy rain in the Dublin district, where also frost was almost entirely absent. In the Co. Wicklow, the rainfall was more than double that registered in Dublin, in consequence of the prevailing southerly and south-westerly winds, the rains borne by which were intercepted by the Dublin mountains.

As in December, 1896, large and deep depressions passed north-eastwards across the British Islands during the closing period of the month. Just before this a local frost of great intensity prevailed in the N.E. of Scotland, becoming general in Great Britain in the days before Christmas.

In Dublin the arithmetical mean temperature (44·9°) was much above the average (41·3°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44·1°. In the thirty-two years ending with 1896, December was coldest in 1878 (M. T.=32·8°), and in 1874 (M. T.=36·8°), and warmest in 1865 (M. T.=46·2°). In 1896, the M. T. was 41·4°.

The mean height of the barometer was 29·751 inches, or 0·124 inch below the corrected average value for December—namely, 29·875 inches. The mercury rose to 30·555 inches at 9 p.m. of

the 21st, and fell to 28·740 inches at 11 p.m. of the 29th. The observed range of atmospheric pressure was, therefore, 1·815 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 44·1°, or 3·7° below the value for November. Using the formula, *Mean Temp.* = *Min.* + (*max.* — *min.* × ·52), the value was 45·1°, or 3·6° above the average mean temperature for December, calculated in the same way, in the twenty-five years, 1865–89, inclusive (41·5°). The arithmetical mean of the maximal and minimal readings was 44·9°, compared with a twenty-five years' average of 41·3°. On the 27th the thermometer in the screen rose to 57·8°—wind, S.W.; on the 3rd the temperature fell to 32·9°—wind, W. The minimum on the grass was 27·9° on the 22nd. There was no frost in the screen, but 12 days of frost on the grass were recorded.

The rainfall was 1·841 inches, distributed over as many as 18 days. The average rainfall for December in the twenty-five years, 1865–89, was 2·404 inches, and the average number of rainy days was 16·9. The rainfall, therefore, was below, while the rainy days were above, the average. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1872, 4·932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4·749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 inch was measured on 13 days; in 1885, only ·742 inch on 10 days; in 1892, only ·795 inch on 10 days; and in 1871, only ·797 inch on 15 days. In 1896, 4·185 inches of rain fell on 20 days.

A lunar halo was seen on the 9th. High winds were noted on 15 days, and attained the force of a gale on 7 occasions—the 7th, 8th, 13th, 16th, 27th, 29th, and 30th. The atmosphere was more or less foggy in Dublin on the 3rd, 4th, 5th, 12th, 17th, 18th, and 23rd. Snow and sleet fell on the 8th. Hail fell on the 14th. Aurora borealis was seen on the 11th. Lightning occurred on the evening of the 14th.

Wednesday, the 1st, was very fine, bright, and bracing in Dublin; but heavy showers of cold rain and hail fell along the coast south of the city, borne in by a strong northerly wind. Thunderstorms occurred at Scilly and Jersey. Thursday was also fine in Ireland generally, sharp frost occurring inland in the morning, a minimum of 27° in the shade being reported from Parsonstown. In the S.E. of England a fresh to strong northerly gale prevailed, accompanied by hail showers. On Friday the barometer gave way in the N.W., so that clouds increased, the wind

shifted to S.W., temperature rose, and rain set in. Saturday was dull, damp and at times foggy. The rainfall of this period (1st-4th) was .273 inch on 2 days.

A cyclonic distribution of atmospheric pressure, and very changeable, unsettled weather held throughout the week ended Saturday, the 11th. Sunday broke damp and foggy in Dublin, but shortly before noon a warm S.W. wind swept away the fog and caused a brisk rise of temperature to  $53^{\circ}$ . Rain set in at 3 p.m. and lasted throughout the evening. Monday was changeable, rain falling in the forenoon, but it became finer, brighter, and colder later on. On Tuesday a large and ultimately deep depression approached the West of Scotland from the Atlantic. It caused squally S.W. to W. winds and gales, with rain. At first temperature rose considerably—to  $55^{\circ}$  at several British stations and to  $56.6^{\circ}$  in Dublin. At 8 a.m. on Wednesday the barometer ranged from 28.46 inches at Sumburgh Head (Shetlands) to 30.47 inches at Lisbon and 30.68 inches in the Azores. In the evening a new depression reached the N. of Scotland from the westward, the barometer sinking to 28.38 inches at Stornoway and 28.39 inches at Wick. This northern depression began to fill up on Thursday, but another disturbance came in over Ireland from W.S.W., so that on Friday the barometer fell to 28.80 inches at Malin Head and to 28.87 inches even in Dublin. Sudden and extreme changes in weather and temperature accompanied these oscillations of atmospheric pressure. On Saturday the barometer rose fast and the weather proved fine, quiet and bright. In Dublin the mean pressure of the air was 29.522 inches, the range being from 30.027 inches at 9 p.m. of Monday (wind, W.) to 28.870 inches at 3 30 p.m. of Friday (wind, W.S.W.). The corrected mean temperature was  $43.7^{\circ}$ . The mean dry bulb reading at 9 a.m. and 9 p.m. was  $41.9^{\circ}$ . On Tuesday the screened thermometers rose to  $56.6^{\circ}$ , on Wednesday they fell to  $36.3^{\circ}$ . The rainfall was .667 inch on six days, .261 inch being measured on Sunday. Westerly (S.W. to W.N.W.) winds were predominant. A perfect lunar halo was seen on Thursday night; a band of auroral light at 6 p.m. of Saturday.

Quiet and calm at its beginning and close, the week ended Saturday, the 18th, was generally unsettled, with frequent rain and squally southerly and south-westerly winds. It blew a fresh gale for several hours on Thursday. Sunday was a beautiful day—fair and calm. There was some fog in the forenoon, but the afternoon was brilliant. This "pet" day was due to the presence of a secondary depression at the mouth of the English Channel. The effect of this was to equalise barometric pressure in Ireland—at



8 a.m. the extreme limit of variation was only .11 inch, the barometer marking 29.67 inches at Roche's Point, Cork, and 29.56 inches at Malin Head, Donegal. Hence clear skies and light winds or calms prevailed. Near Dublin the grass was white with hoar frost throughout the day. Between Sunday and Friday the weather was determined by a series of large and deep atmospheric depressions which travelled northwards or north-eastwards across the Atlantic, Ireland, and Scotland. These caused rains, high temperatures and squalls. On Thursday the shade thermometers rose to  $58^{\circ}$  at Loughborough and Oxford,  $57^{\circ}$  in Dublin and at York, Liverpool and Cambridge, and  $56^{\circ}$  in London. An anticyclone now surged westward from the Continent, causing calm, foggy and colder weather on Friday evening. Saturday was a day of gloom and fog, which became wet in the afternoon. In Dublin the mean height of the barometer was 29.584 inches, pressure ranging from 28.982 inches at 9 p.m. of Monday (wind, S.S.E.) to 30.284 inches at 9 p.m. of Saturday (wind, E.). The corrected mean temperature was  $46.5^{\circ}$ . The mean dry bulb reading at 9 a.m. and 9 p.m. was  $46.1^{\circ}$ . On Sunday the screened thermometers fell to  $33.1^{\circ}$ , on Thursday they rose to  $56.8^{\circ}$ . Rain fell on 4 days to the amount of .405 inch, .173 inch being registered on Wednesday. The wind was chiefly southerly and south-westerly.

Throughout the week ended Saturday, the 25th, the British Islands were within the sphere of an anticyclone, the centre of which lay off the east of Scotland at first and was afterwards found over Belgium, Holland, and North Germany. At 8 a.m. of Wednesday the barometer stood at 30.74 inches at Berlin. Owing to this distribution of pressure, the wind in Ireland was at first easterly, then south-easterly, and finally southerly or south-westerly. Early on Christmas morning there was a strong and squally southerly wind, and on this day the thermometer rose to  $53.6^{\circ}$  in the screen in Dublin. As a rule temperature was much higher in Ireland than in Great Britain, where sharp frosts were felt after Monday. In the N.E. of Scotland an area of intense cold became developed on Sunday—at Nairn the thermometer fell in the screen to  $21^{\circ}$  on Sunday,  $18^{\circ}$  on Monday,  $17^{\circ}$  on Tuesday,  $14^{\circ}$  on Wednesday, and  $12^{\circ}$  on Thursday. At the same station the highest shade temperature on Monday was  $29^{\circ}$ ; on Tuesday and Wednesday it was  $31^{\circ}$ . At 8 a.m. of Thursday the thermometer read  $21^{\circ}$  at Nairn,  $22^{\circ}$  at Loughborough and Cambridge,  $23^{\circ}$  at Aberdeen,  $24^{\circ}$  at Oxford,  $25^{\circ}$  at Wick,  $26^{\circ}$  at York, and  $28^{\circ}$  in London. The isotherm of  $30^{\circ}$  embraced nearly the whole of Great Britain, while Ireland was from  $10^{\circ}$  to  $15^{\circ}$  warmer. Christmas



Day proved exceptionally mild and fine. In Dublin the mean height of the barometer was 30·342 inches, pressure ranging between 30·555 inches at 9 p.m. of Tuesday (wind E.S.E.) and 30·123 inches at 9 p.m. of Friday (wind, S.S.E.). The corrected mean temperature was 43·8°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 43·2°. The screened thermometers fell to 33·8° on Wednesday, and rose to 53·6° on Saturday. The only precipitation was a slight shower on the afternoon of Christmas Day. It yielded no measurable rainfall in the gauge.

Very unsettled and often tempestuous was the weather of the closing period of 1897. Temperature, although very unsteady, ranged high—the mean being some 7° above the average. The weather characteristics just mentioned were brought about by the passage north-eastwards across the Atlantic and British Isles of a succession of large and unusually deep atmospheric depressions. In one of these the barometer sank to 28·19 inches at Stornoway, in the Hebrides, at 2 p.m. of Thursday. On Sunday morning, December 26, frost still held in the midland counties, and the E. and S.E. of England. But in Ireland and Scotland the thermometer stood between 45° and 53°. Next morning it had risen from 16° to 19° in England also, and frost had disappeared from all parts of the British Isles. Southerly and southwesterly gales prevailed on all coasts between Monday and Friday, and rain fell abundantly. Thunder, lightning, and hail were reported from Roche's Point, Co. Cork, on Thursday evening. On Friday afternoon the barometer rose briskly in Ireland, and the wind veered to N.W. with a falling temperature. In Dublin the barometer ranged between 30·061 inches at 9 a.m. of Sunday (wind, S.S.W.) and 28·740 inches at 11 p.m. of Wednesday (wind, S.S.E.). On Monday the screened thermometers rose to 57·8°, on Tuesday they fell to 39·4°. S.S.W. winds predominated. Rain fell daily to the total amount of ·496 inch, ·159 inch being measured on Tuesday.

The rainfall in Dublin during 1897 amounted to 29·344 inches on 211 days, compared with 26·901 inches on 194 days in 1896, 31·242 inches on 194 days in 1895, 29·261 inches on 209 days in 1894, only 20·493 inches on 174 days in 1893, 25·644 inches on 196 days in 1892, 27·820 inches on 184 days in 1891, 27·562 inches on 200 days in 1890, 27·272 inches on 193 days in 1889, 28·679 inches on 190 days in 1888, 16·601 inches on 160 days in 1887, and a twenty-five years' average of 27·696 inches on 194·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in December, 1897, was 4·700 inches, distributed over 22 days. Of this quantity ·990 inch fell on the 27th. From January 1st to

December 31st, 1897, rain fell at Knockdolian on 210 days, to the total amount of 42·885 inches. The corresponding figures for 1893 were 22·526 inches on 170 days; for 1894, 38·776 inches on 184 days; for 1895, 35·135 inches on 174 days; and for 1896, 36·102 inches on 169 days.

Mr. Robert O'Brien Furlong, M.A., writes:—

The rainfall at Cloneevin, Killiney, in December, 1897, was 2·47 inches on 20 days. The maximal fall in 24 hours was ·48 inch on the 15th. The average December rainfall of the 11 years 1885–96, was 2·490 inches on 17 days. The maximal daily fall was 1·42 inches on September 1st. The rainfall for 1897, though less than that of 1895 (=32·85 inches) or 1894 (=32·64 inches) was largely in excess of the average of the 11 years, 1885–95, viz., 26·58 inches. Rain measuring ·01 inch and upwards fell on 204 days, the average of 11 years being 179. There was a period of absolute drought from May 8th to May 24th. On June 11th there was a thunderstorm. Snow fell on January 14th (lightly) 15th (lying to the 19th) and 22nd (lying to the 29th); also on April 1st.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell during December on 20 days to the amount of 3·865 inches, ·492 inch being measured on the 15th. At this climatological station the highest temperature in the shade was 55·4° on the 7th, the lowest was 33·0° on the 3rd. The rainfall for the year 1897 was 40·193 inches on 194 days, the maximal daily fall having been 2·308 inches on September 1st.

## RAINFALL IN 1897,

*At 40 Fitzwilliam-square, West, Dublin.**Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground, 1 ft. 4 in. ; above sea level, 50 ft.*

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
	Inches	Depth	Date	
January, .	2·694	·579	6th	17
February, .	1·395	·269	2nd	16
March .	2·980	·735	11th	24
April, .	2·485	·421	20th	22
May, .	1·139	·266	6th	14
June, .	3·257	·660	8th	20
July, .	1·650	·285	26th	12
August, .	3·788	·901	7th	24
September, .	2·588	1·166	1st	16
October, .	2·110	·637	14th	14
November, .	3·422	·937	13th	14
December, .	1·841	·261	5th	18
Total, .	29·344	—	—	211

The rainfall was 1·648 inches in excess of the average annual measurement of the twenty-five years, 1865–89, inclusive—viz., 27·696 inches.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, in 1884, when the measurement was 20·467 inches, and in 1893 with its rainfall of 20·493 inches. In seven of the twenty-five years in question the rainfall was less than 26 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1886—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1897 there were 211 rainy days, or days upon which not less than .005 inch of rain (five-thousandths of an inch) was measured. This was much above the average number of rainy days, which was 194·3 in the twenty-five years, 1865–89, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rainy days were only 160, and in 1870 they were only 145.

The rainfall in 24 hours, from 9 a.m. to 9 a.m., exceeded one inch on two occasions in 1892—viz., May 28th (2·056 inches) and August 16th (1·310 inches). On no occasion in 1893 did one inch of rain fall on a given day in Dublin. In 1894 falls of upwards of an inch of rain in 24 hours were recorded on four occasions—viz., May 15th (1·330 inches); July 24th (1·560 inches); August 25th (1·369 inches); and October 23rd (1·042 inches). In 1895, 1·802 inches fell on January 12th; 1·014 inches on July 24th; and 1·256 inches on July 25th. In 1896, 1·563 inches fell on July 8th; 2·020 inches on July 24th; and 1·388 inches on December 8th. In 1897, 1·166 inches fell on September 1st.

Included in the 211 rainy days in 1897 are 15 on which snow or sleet fell, and 30 on which there was hail. In January hail was observed on 5 days, in March on 7 days, in April on 5 days, in May on 5 days, in July on 2 days, in September on 3 days, in October, November, and December on 1 day. Snow or sleet fell on 5 days in January, on 6 days in March, on 2 days in April, and also on 1 day in both November and December. Thunder occurred on 6 occasions during the year—once in January, March, June, and July, and twice in August. Lightning was also seen on two occasions in March, and once in June, October, November, and December.

The rainfall in the first six months was 13·950 inches on 113 days. The rainfall exceeded 3 inches in June (3·257), August (3·788), and November (3·422). In May it was only 1·139 inches on 14 days.

The rainfall was distributed as follows:—7·069 inches fell on 57 days in the first quarter, 6·881 inches on 56 days in the second, 8·021 inches on 52 days in the third, 7·373 inches on 46 days in the fourth and last quarter.

Aurora borealis was observed on December 11th. More or less fog prevailed on 64 occasions—9 in January, 7 in February, 2 in March, 1 in April and May, 7 in June, 3 in July, 1 in August, 6 in September, 9 in October, 11 in November, and 7 in December. High winds were noted on 143 days—11 in January, 7 in February, 19 in March, 16 in April, 12 in May, 7 in June, 9 in July, 16 in August, 11 in September, 9 in October, 11 in November, and 15 in December. The high winds amounted to gales (force 7 or upwards according to the Beaufort scale) on 39 occasions—4 in January, 5 in February, 9 in March, 2 in April, 1 in May, 2 in June, 1 in July, 3 in August, 1 in September, 3 in October, 1 in November, and 7 in December.

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MARCH 1, 1898.

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## PART I. ORIGINAL COMMUNICATIONS.

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ART. XII.—*Laryngeal Necrosis in Enteric Fever.*\* By SIR GEORGE DUFFEY, M.D.; President Royal College of Physicians of Ireland; Physician to the City of Dublin Hospital, &c.

THE occurrence of laryngeal complications in enteric fever, and their relationship to the typhoid process, is a matter of considerable interest. Under the name of Laryngo-Typhoid, Professor C. Gerhardt, of Würzburg,<sup>b</sup> has described a case in which typhoid commenced as a laryngitis, and was first localised in the larynx. But more usually, and apparently much more frequently in France and Germany than in Great Britain and Ireland, laryngeal affections in enteric fever occur as a secondary complication at a late period in the course of the disease.

That the inflammation and ulceration of the laryngeal mucous membrane, which is the usual starting point of perichondritis and subsequent necrosis of the laryngeal cartilages in these cases, is of a specific or typho-genetic nature—the result of the typhoid bacillus—would appear to be a reasonable presumption. It is not one, however,

\* Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, January 28, 1898. [For discussion on this paper, see page 244.]

<sup>b</sup> Archives of Laryngology. Vol. I., p. 121.

I believe, that is generally accepted. Dr. P. Watson Williams,<sup>a</sup> in 1894, communicated to the Section of Laryngology and Otology at the annual meeting of the British Medical Association at Bristol, particulars of a fatal case of enteric fever with laryngeal ulceration, in which cultures from the local lesion yielded the typhoid bacillus.

Drs. Kanthack and J. A. Drysdale<sup>b</sup> hold, however, that the laryngeal lesions are undoubtedly caused by micro-organisms, and that these are pyococci, and not, with very rare exceptions, the typhoid bacillus. Lesions which are looked upon as instances of secondary infection by streptococci, such as localised periostitis, are comparatively frequent in cases of enteric fever complicated by secondary suppuration. And in some cases—which are always ones of peculiar gravity—typhoid bacilli have been found associated with streptococci.

Again, Dr. Johnson Horne<sup>c</sup> states that in some of the larynges of persons dying from typhoid fever the ulceration has been proved by microscopical examination to be of a tuberculous nature. Hence the tuberculous diathesis may be, in this way, a factor in the ætiology of typhoid ulceration of the larynx, one of the characteristic features of which affection is the tendency to suppuration about the cartilages, leading to their necrosis.

Some (Dittrich, Ruehle) look upon the laryngeal ulcers in enteric fever, as well as in tuberculosis also, as allied in their origin and nature to bed-sores, and due partly to pressure and partly to disturbance in the circulation and innervation of the parts, and the name of “decubitus ulcers” has consequently been proposed for these ulcers.<sup>d</sup> Landgraff<sup>e</sup> considers, however, that the necrosis of the mucous membrane is a local gangrene produced not by pressure, but by blood stasis. In his admirable Lettsomian lecture delivered last year,<sup>f</sup> Dr. F. De Havilland Hall

<sup>a</sup> Brit. Med. Jour. Vol. II., 1894, p. 1353.

<sup>b</sup> Ibid. Vol. I., 1896, p. 596.

<sup>c</sup> Laryngolog. Soc. Lond. Feb. 12th, 1896; and Brit. Med. Jour., *ibid.*, and Vol. I., 1897, p. 323.

<sup>d</sup> Allbutt. System of Med. Vol. I., p. 819.

<sup>e</sup> Central f. klin. med., No. 17. Lancet. Vol. I., 1890, p. 1135.

<sup>f</sup> Brit. Med. Jour. Vol. I., 1897, p. 323.

states that he is inclined to agree with Kanthack and Drysdale in their belief that these laryngeal ulcerations during the course of typhoid fever are caused by fresh infection with pyogenic organisms, which always abound in the larynx, and which gain a firm foothold on the debilitated tissues; although they cannot deny that in an individual case the typhoid bacillus may have escaped and caused the lesion.

I regret that I am unable to adduce any bacteriological or microscopical evidence, confirmatory or otherwise, of any of the views I have mentioned; but some details of a case I had recently under my care, in which, for the second time in my experience, fatal laryngeal complication occurred in enteric fever, may be of some interest.

**CASE.**—J. S., a slightly-built, poorly-nourished, delicate-looking man, aged twenty-two years, married, was admitted to the City of Dublin Hospital on 3rd November, 1897. He stated that his illness commenced with a shivering about a fortnight before his admission, but he continued at his work as a labourer, although feeling unwell, for a week, when he took to his bed, where he remained another week, and was then seen by Dr. Hatch, who sent him to hospital. Enteric fever was diagnosticated; the attack was an extremely severe one, his temperature for nine days subsequent to admission being an almost continuous one of  $104^{\circ}$ . He had also troublesome cough and some expectoration, due to bronchitis, and his bowels were at first constipated; but on Nov. 10th and 11th—probably the 20th and 21st days of his illness—he had some diarrhoea, and the light-coloured fluid-stools were passed involuntarily. All through his illness he was heavy and drowsy, and from an early period in it his pulse was quick, weak, and dicrotic. His respirations were generally 30 in the minute.

On Nov. 18th (28th day) his temperature fell to  $102^{\circ}$ . He appeared better; the cough was not so troublesome, and the expectoration had ceased. Four days subsequently (32nd day of disease) there was a further fall of his temperature to  $101^{\circ}$ . He seemed more sensible, and to be convalescing, although extremely weak.

On Saturday, Nov. 27th (37th day), a week before his death, the night nurse reported that at four a.m.—having previously slept quietly for four hours—he had had a fit of coughing, and had found great difficulty in breathing for some minutes. His temperature

fell to  $97.8^{\circ}$ , from having been  $101^{\circ}$  the previous evening. The following night he first complained of his throat, but poulticing relieved it temporarily. During the next day he seemed fairly well, although heavy and drowsy; but at night his throat again became troublesome, and his breathing so loud and stridulous that it could be heard on the landing above the ward he was in. The House Surgeon noticed that the uvula was very pendulous. His condition as regards his breathing varied considerably during the following days—sometimes better, but always worse at night and when asleep. There was also some hoarseness, and the voice was weak. No tenderness was elicited on pressure over the larynx, nor was there any swelling about it or of the glands in the neck. My colleague, Dr. Parsons, kindly essayed to make a laryngoscopic examination, but owing to the great physical prostration of the patient, and the dependent position of the epiglottis, which was slightly injected, the glottis could not be seen.

In the event of the necessity suddenly arising, everything was kept in readiness for the operation of tracheotomy. On the night of Dec. 1st his respiration, which had been quiet during the day, became much more difficult, and there was some dysphagia. His temperature continued subnormal, and he was extremely weak. Early on the morning of Friday, Dec. 3rd, his breathing, which had presented the usual exacerbation during the night, was still so laborious and noisy that a consultation was hastily summoned to consider the propriety of an operation. The straining and exaggerated movements of the larynx were most distressing, but upon auscultation plenty of air was heard entering the lungs, and there were no threatening symptoms of suffocation and no cyanosis. It was considered, and not unreasonably, by some of the consultants that the man was then in a dying state, and an operation was not therefore concurred in. He improved slightly during the day, and took nourishment fairly. At midnight his temperature fell to  $95^{\circ}$ . He became much weaker and cyanosed, and died about 2 30 a.m. on Saturday, Dec. 4th, the 44th day of his illness, and the 7th day from the accession of the laryngeal symptoms.

The *post mortem* examination showed typical typhoid ulceration, in process of cicatrization, in the ileum, with enlargement of the mesenteric glands and of the spleen. The lungs and other organs appeared normal. The larynx (specimen exhibited) was carefully removed by my colleague, Mr. G. Jameson Johnston. The epiglottis was swollen, and there was oedema of the ary-epiglottidean folds. The mucous membrane over the ary-tænoids was also swollen and injected. On the external and posterior surface of the plate of the



cricoid a small dirty-yellowish spot was observed. An incision through this spot opened a small abscess, which contained about half a drachm of pus. The abscess-cavity separated the swollen perichondrium from the underlying cartilage, which was roughened and eroded. No ulceration was observed.

Seventeen years ago I exhibited, at a meeting of the Pathological Society of Dublin,<sup>a</sup> a specimen of necrosis of the cricoid and arytaenoid cartilages, which occurred during apparent convalescence after a severe and protracted attack of enteric fever. In that case the laryngeal symptoms—which were almost identical with those in the case I have just detailed—set in on the seventy-ninth day of the man's illness, and proved fatal in seven days also. An abscess the size of a walnut was found between the pharynx and the arytaenoid and cricoid cartilages, portions of which could be felt bare and loose at both sides of the abscess. No ulceration was visible in the larynx, but there was evident perichondritis and necrosis of the cartilages.

At the meeting at which I showed the latter specimen both Drs. A. W. Foot and J. W. Moore mentioned having each had a case of enteric fever under their care in which laryngeal symptoms had occurred; and Dr. E. H. Bennett described a case of laryngeal perichondritis after typhoid, in which he had successfully performed tracheotomy—the operation being necessary in consequence of an attack of violent dyspnoea. With the exception of the remarkable case brought before the Section of Pathology of this Academy by my colleague, Dr. Parsons,<sup>b</sup> in November, 1894, in which acute laryngitis set in suddenly on the thirty-second day of a case of enteric fever, necessitating tracheotomy, subsequent to which general emphysema occurred, no other similar cases in Ireland have been published, as far as I know. In England, also, the complication appears to be seldom met with. It is possible that its occurrence may be often overlooked at autopsies, in consequence of the absence of any definite symptom during the patient's life pointing to the larynx. Indeed, it has

<sup>a</sup> *Dubl. Jour. Med. Sci.* Vol. LXXI., p. 555.

<sup>b</sup> *Trans.* Vol. XIII., p. 337.

been asserted by Fagge<sup>a</sup> that ulceration in these cases very rarely gives rise to any symptoms. Thus, in the second case of the kind reported by Dr.—now Sir Samuel—Wilks,<sup>b</sup> it is expressly stated that there were no symptoms especially referable to the larynx. After death a small slough was found at the back of the larynx, close to the posterior attachments of the vocal cords, and the arytaenoid cartilage was also exposed.

In the first case described by Wilks<sup>c</sup>—the remarkable one in which general emphysema occurred—no mention is made of any laryngeal symptoms. The patient was a lad aged twelve years. About the twelfth day of his illness (typhoid fever) his neck was observed to be emphysematous. He lived for ten days subsequently. After death a sloughing ulcer was found in the back of the larynx at the junction of the vocal cords. Air had penetrated through the opening thus formed into the posterior mediastinum, and thence by the thoracic walls to the neck and other parts of the body. Von Ziemssen<sup>d</sup> also met with a similar case in which general emphysema occurred, in a girl of four years of age, in the middle of the third week of her fever. A perforating ulcer, the size of a lentil, was found at the base of the left arytaenoid cartilage, under the left vocal cord, penetrating to the necrotic arytaenoid and cricoid cartilages. But during life there was “no hoarseness, no appearance of laryngeal stenosis.”

As to the frequency of laryngeal complications in enteric fever—among a total of 6,513 cases of enteric fever, of which 439 were fatal, seen at St. Petersburg in the quinquennial period from 1886–87 to 1890–91, Ouskow<sup>e</sup> found ulceration of the larynx in about 30 per cent. Griesinger<sup>f</sup> met with it in 31 out of 118 autopsies (=27 per cent.). Kanthack and Drysdale, from the *post mortem* records of 61 cases, found ulceration in 26 per cent., and Zuelzer in

<sup>a</sup> Prin. and Pract. of Med. Second Ed. Vol. I., p. 182.

<sup>b</sup> Trans. Path. Soc. Lond. Vol. XI., p. 14.

<sup>c</sup> Ibid. Vol. IX., p. 34.

<sup>d</sup> Cyclopæd. Vol. VII., p. 827.

<sup>e</sup> Annual Univ. Med. Sci., 1894. Vol. I., p. 23.

<sup>f</sup> Quoted by Parsons. Loc. cit.

more than 20 per cent. Hoffman,<sup>a</sup> as quoted by various authors, gives 28 cases out of 250 necropsies, that is a percentage of 11 only as against 30. Out of 20 cases of perichondritis given in Retslag's statistics, typhoid fever was the ascribed cause in 8; and in another series of 45 autopsies of cases of necrosis of the cartilages, also published by M. Mackenzie,<sup>b</sup> the cricoid—which appears to be the cartilage that most commonly suffers—was affected in four instances.

None of the cases reported by Ouskow occurred in the first week of their illness. Of cases dead in the second week, 79—*i.e.*, 15 per cent.—presented ulceration of the larynx. Of those dead during the third week, 144—37 per cent.—presented laryngeal ulceration; of those dead in the fourth week, 89—39 per cent.—presented ulceration. The affection is, accordingly, one that is more frequent at a late stage of the disease; and, as Trousseau has pointed out, is especially likely to occur in protracted cases of an adynamic type.

Dr. Church,<sup>c</sup> in the same year as that in which my first case was reported, recorded a case in which two small abscesses formed in the larynx, in connection with necrosis of the arytaenoid cartilages, and were the immediate cause of death, which happened about the end of the fourth week of the fever. Osler<sup>d</sup> has seen two cases of the kind, both of which recovered—one after the expectoration of large portions of the thyroid cartilage. Hérard and others have had similar cases. Trousseau, who refers to Hérard's case, himself met with two instances only of perichondritis laryngea, as a sequel to enteric fever.<sup>e</sup> In both of these tracheotomy was successfully performed. He quotes three other cases, all of which were fatal. The first, on the second day after tracheotomy, and the second died during the operation. The third case was not operated upon.

Hölscher, cited by Pepper,<sup>f</sup> reports tracheotomy having

<sup>a</sup> Fagge. *Loc. cit.* J. W. Moore, *Eruptive and Cont. Fevers*, p. 418, &c.

<sup>b</sup> *Diseases of the Throat and Nose*. Vol. I., p. 391.

<sup>c</sup> *St. Bart. Hosp. Rep.* Vol. XVII., p. 104.

<sup>d</sup> *Prin. and Pract. of Clin. Med.* P. 25.

<sup>e</sup> *Clin. Méd.* T. I., 197. 1861. And *Syd. Soc. Trans.* Vol. II., 398.

<sup>f</sup> *Text-book*. Vol. I., p. 95.

been done 15 times for perichondritis in 2,000 fatal cases of typhoid fever.

As regards the question of performing tracheotomy in such cases as mine, I much regret now that I did not request my surgical colleagues to consider the advisableness of operating at an earlier period in the case than that at which I did in both my cases. I think that if a tracheotomy had been done as soon as the laryngeal symptoms became urgent, and were found not to be permanently relieved by the treatment adopted, it would, at least, have given the inflamed larynx rest;\* and would also, to a great extent, have saved the patient the exhaustion induced by the dyspnœa.

According to Theopold's statistics,<sup>b</sup> in twenty-two cases of perichondritis after typhus (enteric fever?), tracheotomy was successful eight times, so far as the preservation of life was concerned. In none of these eight patients, however, did the stenosis afterwards diminish to such an extent as to permit of the removal of the cannula. Pachmayr, quoted by Stolterforth,<sup>c</sup> has collected a series of 46 cases of tracheotomy for laryngitis during the course of typhoid. Of these 20 recovered.

In one of the cases referred to by Trousseau, the patient, it is said, had been subject to loss of voice before his attack of typhoid fever. The mother of the man whose case I have now brought forward told me that he always had "a delicate throat." Possibly an hereditary predisposition, or, perhaps, a previous tendency to laryngeal inflammation, may render patients who contract enteric fever more vulnerable than others to this serious complication.

In further considering the ætiology of the laryngeal complications of enteric fever, I have been struck by the circumstance that, in the reported cases I have been able to consult and in which the particulars are given, all the patients, with one exception (von Ziemssen's case), were young men. Thus the ages in Trousseau's cases were 18,

\* Cf. Hilton. *Rest and Pain*. 6th Ed., p. 64.

<sup>b</sup> Von Ziemssen. *Loc. cit.*

<sup>c</sup> *Lancet*. 1889, p. 682.

20, 22, and 17; in Wilks', 12 and 23; W. Williams', 20 and 38; Gerhardt's, 18; J. W. Moore's, 15; Parsons', 22; and my two cases, 27 and 23.

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**ART. XIII.—*A New Method of Nephrectomy.*** By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

*(Continued from page 7.)*

THE following cases were conducted on the same plan as Case I., described in my paper on this subject in the January number of this journal:—

**CASE II.**—Mr. J. S. came under my care on October 10th, 1896, complaining of pain in the right side, dragging weight in the right loin, and frequency of micturition. He had a temperature of 104° at night, 99° in the morning, with nocturnal sweats. On examination I found a large nodular tumour occupying the right subchondrial region, and bi-manual examination showed that it rested on the quadratus lumborum, and it was movable downwards and inwards. There was slight albuminuria, but urea was excreted in fair amount.

On Oct. 12th, assisted by Mr. Tobin and Dr. Smyth, I removed a mass weighing 5½ pounds. During the operation I found it necessary to freely incise the mass, to evacuate considerable quantities of pus, so as to reduce its size and allow its removal. Continuous irrigation with warm boric solution and packing round of the tumour with gauze sponges prevented local infection, while early suture of the peritoneal incision protected that membrane. One of the incisions bled profusely, but fixing the edges by clamp forceps and then encircling the mass beyond these with elastic tubing thoroughly arrested the flow. The course of this case was uneventful, and he left town on the 15th day after operation increased in weight, free from night sweats, and passing urine in normal amount, and free from albumen.

**CASE III.**—Mrs. Ann B., aged fifty-eight years, came under my care on Oct. 8th, 1896. She was pale and emaciated, had frequent vomiting and diarrhoea, and for some months she had observed occasional discharges of offensive-smelling matter in the urine. This discharge had of late increased in quantity and occurred more frequently, so that a diagnosis had been made of suppurative cystitis. On examination I found a tumour occupying the left

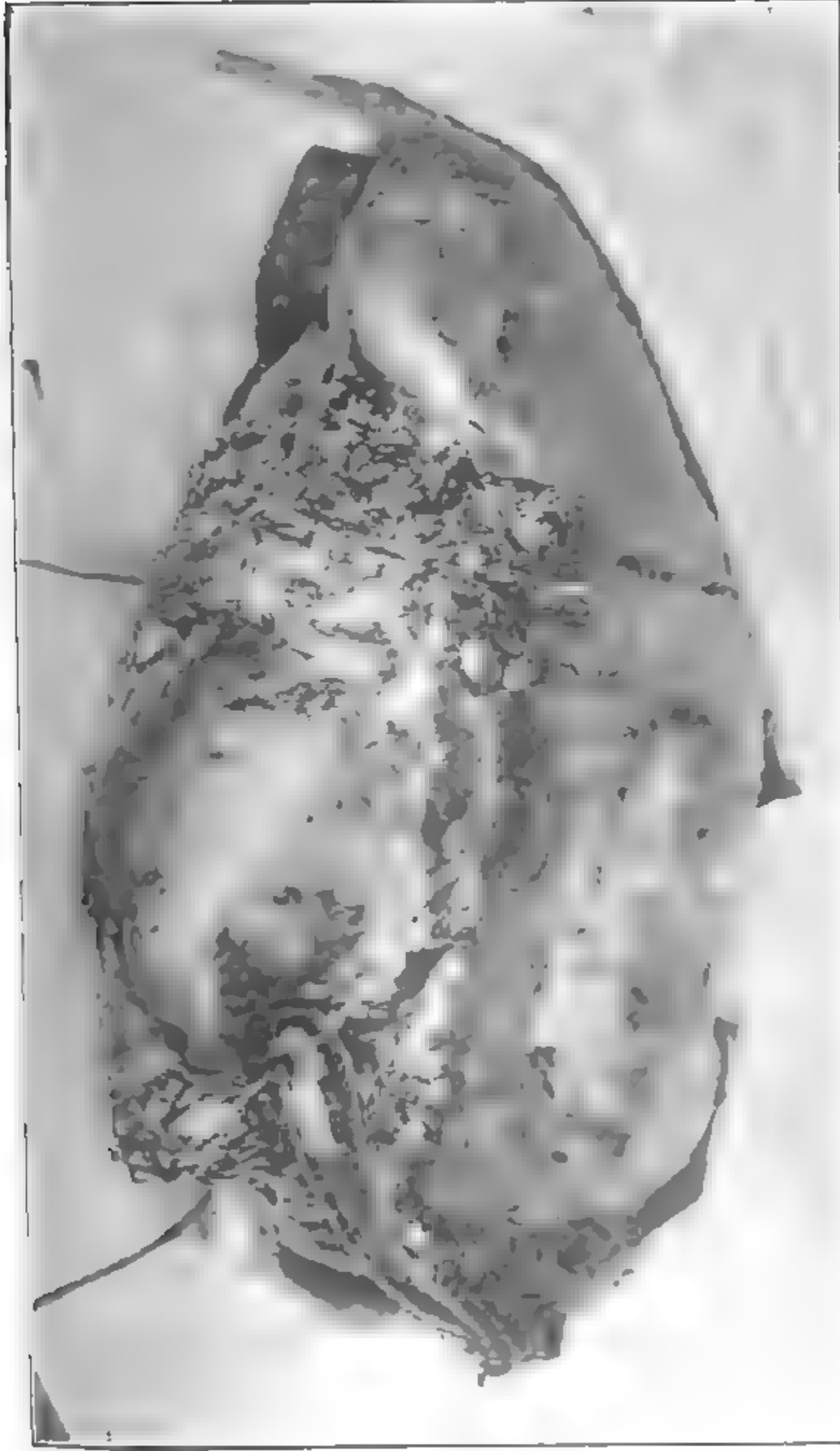
lumbar region. It was rounded in outline and extended inwards to the umbilicus, and downwards to the crest of the ilium. It was movable downwards and inwards, and its posterior surface could be felt on the quadratus lumborum. Fluctuation was marked on the inner aspect, and here and there spots of fluctuation could be felt.

While the patient was kept in bed she had little or no pain, and the discharges of pus became less frequent, and it was noticed that as long as she remained on the right side no pus appeared in the urine, but on changing position suddenly a free flow of pus occurred.

On the 19th of Oct. I opened the left semilunar line and examined the right kidney, which was slightly larger than normal, but smooth and of normal outline. I cleared the peritoneum from the outer lip of the wound and closed the peritoneal opening by continuous suture. Now, passing my hand backwards between the parietal peritoneum and the transversalis fascia to the edge of the quadratus lumborum, I guided the blade of a stout scissors backwards and upwards and cut through the abdominal wall so as to expose the peri-renal fat. Turning the flaps thus formed upwards and downwards, as in Fig. 4, page 5, I was enabled to examine the tumour thoroughly, and finding the pelvis distended and very tense, I determined on dealing at once with the ureter, so pushing the colon inwards, and with it the outer layer of meso-colon, I was enabled to secure the ureter by double ligature and then cut it. The renal vessels now came to hand with ease and were ligatured close to the aorta. Near the tumour a strong clamp was applied and the vessels were divided. As there was great foetor all this time from the tumour irrigation with warm boric solution was kept up, so that should any rupture of the pelvic or cortical abscesses occur the discharge would be at once removed. Once the vessels were secured enucleation of the tumour was safe and easy.

Fig. 5 is a photograph of the mass reduced to one-fourth the original size, and it shows a peculiar sigmoid twist of the ureter, which accounted for the intermittent flow of pus from the pelvis. So long as the kidney fell downwards and to the right this twist was exaggerated, and no discharge could occur, but the moment the kidney fell back into place the ureter became somewhat straight and pus escaped.

This patient made a perfect recovery, and some weeks later kindly presented herself at the Surgical Section of the Royal Academy of Medicine to allow me to demonstrate the absence of any weakness in the lines of incision. The value of trans-



**MR. M'ARDLE ON NEPHRECTOMY.**

**FIG. 5.**—Kidney showing—(a) Dilated pelvis; (b) sigmoid twist on ureter, which caused intermittent flow of pus from pelvis; (c) many secondary collections of pus in the cortex. The perirenal tissue filling up hilum is well shown.





peritoneal examination of the opposite kidney cannot be exaggerated. Here, for instance, I removed a kidney with much substance, capable of secreting urine, but so diseased that its removal was decidedly indicated when the opposite kidney was sound; but, had I found the other kidney diseased, displaced or absent, my course of action would have been very different, because nephrectomy under these conditions would lead to the development of uræmia and rapid death. What I have done successfully in cases complicated by renal incompetency on the side opposite the tumour is to freely incise the abscesses, pelvic and cortical, thoroughly irrigate with a solution of acetate of aluminium, and then tampon tightly with iodoform gauze, which should be frequently changed. This procedure I have found to be of immense temporary benefit; and in several cases years of comparative comfort have been obtained for the patient.

*(To be continued.)*

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**ART. XIV.—*Successful Laparotomy, with Removal of both Fallopian Tubes, for Acute Suppurative Peritonitis, supervening upon Double Pyosalpinx.*** By JAMES R. WALLACE, M.D., F.R.C.S.I.; Fellow of the Obstetrical Society of London; formerly Resident Surgeon to the Eden Hospital for Women and Children, Calcutta.

MRS. S., a Scotch lady, twenty-eight years of age, of very delicate physique, for some years a resident of Calcutta, six years married, gave birth to her first and only child ten months after marriage. No further issue. Has suffered with ovarian pain since her child's birth, in June, 1893. Came under my care about three years ago for menstrual trouble. Was completely relieved, and seemed to regain her health in every way. Being one of my regular annual patients, I frequently saw her, and by means of sedatives, timely given, her sufferings were minimised, though every now and again they threatened badly. During my absence in England she got a severe attack of pelvic inflammation, and was attended in August last by Surgeon-Lieutenant-Colonel J. Lewtas, under whose care she obtained very

satisfactory relief. Early in October she was laid up again with pelvic cellulitis, supervening upon a severe chill, due to bathing in a very windy bathroom. Her temperature rose to  $105^{\circ}$ , and kept ranging between  $102^{\circ}$  and  $104^{\circ}$  for days. There were intense nausea and vomiting and great pelvic pain and tenderness, more marked in the left iliac region. There were the most troublesome restlessness and insomnia, due to pain, which narcotics and hypnotics could not relieve. Fomentations, local sedatives, and counter-irritants all failed to afford anything more than very transient comfort in her great suffering. Examined vaginally and bimanually, the uterus was found immovably fixed in a dense, hard mass of infiltration, filling the left and extending partially into the right *cul-de-sac*. This swelling reached almost to the umbilicus above, and pressed firmly on the sacral hollow. It was devoid of resiliency or any sign of fluid formation. This state of things continued till the 8th November, when, on examination, I detected distinct fluctuation in the left *cul-de-sac*. The patient had now become very low, and as the exhaustion, coupled with the high temperature present, pointed to considerable risk, I advised a consultation with some other physician. I, therefore, asked Surgeon-Lieutenant-Colonel A. Leahy to see the case with me. He confirmed my opinion as to the fluid formation in the left iliac region, and agreed with me in the view that immediate aspiration should be resorted to. I accordingly called in Dr. J. G. Anderson, who chloroformed the patient, and I aspirated the left *cul-de-sac*, drawing off nearly five ounces of thick, grey-coloured pus. This was followed by immediate relief and comfort, and sound sleep, together with a fall of temperature to normal. For three days the patient seemed doing most satisfactorily, but on the fourth day after the operation pain and tenderness returned, together with fever, which rose again to  $104^{\circ}$ , attended with the same restlessness and insomnia.

On the 14th October the patient was very much worse; the abdomen was greatly distended and tympanitic, and acutely tender to the touch; the pulse was small and thready and intermittent; the body was bathed in cold perspiration, and collapse seemed imminent. Vaginal examination proved

a re-accumulation of pus in the left side of the pelvis, while in the right *cul-de-sac* there was a similar fluctuant tumefaction. I called in Dr. Leahy, as I felt convinced that general pelvic suppuration, with peritonitis of a like character, had set in, and the saving of life could only be effected by abdominal section and rapid washing out of the peritoneal cavity. Dr. Leahy concurred in this opinion, and I resolved to let the patient have the best and only chance of recovery. Her critical condition was explained to her and her husband, and the risks of the operation were also clearly set forth to them. They both readily decided for the operation. The room was an upper flat, airy apartment, surrounded on every side by other houses, and in the most densely populated portion of the English quarter of the city. The room having been thoroughly swept, the walls well dusted, all hangings removed, and the floor washed with a strong solution of carbolic acid, nothing but the operating table, the nurse's bed, a couple of chairs and side tables were placed in it, every other item of furniture being turned out. As helps at the operation I had Dr. Ayatulla, M.B. Edin., Mrs. E. W. Madge, L.M.S., and Nurse Robson.

As it was decided to operate at 2 p.m. no food was given to the patient from 10 a.m. At noon an enema was administered, and the patient's bowels were relieved, her bladder was also emptied, and the hair shaved from the pubis, while the abdomen and thighs and back were thoroughly washed, and a sterilised towel, soaked in hot carbolic acid solution, was laid over the abdomen and the vulvæ, and tucked under the nates. The preparations for the operation were simple, and were as follows:—About 40 gallons of pure boiled water, cooled down to 100° F; a dozen new hand towels, two new flannel binders, 4 yards of gauze, some cotton wool, a dozen sponges, a two-quart irrigator, fitted with a new rubber tube, stop-cock, and pipe; a bucket, a glass tray for instruments, and two pus basins. The instruments for use were a scalpel, a dissecting forceps, a pair of dressing scissors, a director, six Spencer Wells' forceps, two metal retractors, six curved surgical needles and a needle-holder, besides silk, silver, and horsehair sutures. *Everything* used in the operation was sterilised—i.e., put into boiling water

for twenty minutes—except rubber tubes, which were irrigated and carbolised.

At 2 p.m. the patient was placed under chloroform by Dr. Ayatulla, the abdomen and other parts were carefully bathed and scrubbed clean, and the two assistants (Mrs. Dr. Madge and Nurse Robson) and myself, having first of all undergone the most careful cleansing of our hands and nails and arms (each one's nails were cut short) by means of repeated washing with soap and boiled water, and scrubbing with nail brushes, the abdomen, in the median line, was laid open carefully down to the peritoneum, by an incision four inches long. All bleeding points were secured, and the peritoneum nicked up and slit over a director. The peritoneum was found thickened, and inflamed, and covered with cake-like deposits of lymph which had caused firm adhesions between this membrane and the intestines. By gentle manipulations these were freed, and then the true state of things in the pelvis was revealed. The pelvic cavity was filled with an indescribable mass of hardened tissues and organs, whose outlines were completely disfigured by inflammation and suppurative changes. Most patiently and carefully, however, the uterus was cleared, and then the ovaries were reached, and it was seen that the tubes were enormously distended with pus. They were both freely incised and about eight ounces of pus came away. This was removed from the pelvic cavity by means of soaking with sponges. It was now found that the membrane of the tubes looked very sloughy, almost gangrenous, so I snipped off all the unhealthy looking shreds, and, finding the ovaries healthy, I left them untouched. I now allowed a stream of sterilised water to flow into the abdomen and thoroughly wash out its entire cavity. Having assured myself that there were no bleeding points (the few that showed themselves were stopped easily by a few moments' pressure with Wells' forceps), and that the pelvis was thoroughly clean, I placed a large rubber drainage tube into the pelvic cavity and fixed its outer end to the lower angle of the abdominal wound. This was removed after 48 hours. I now stitched the edges of the incision together, using three consecutive layers of stitches, the first of silk for the peritoneum, the next of silk for the

abdominal muscles, and the third of silver wire for the abdominal wall (skin and fat). Superficial horsehair stitches were used to accurately co-adapt the edges of the cut skin. The dressings consisted of sterilised gauze and sterilised cotton kept *in situ* by a sterilised towel used as a binder. This dressing was not changed for two days. The patient bore chloroform well and also the early part of the operation, but by the time she was dressed the pulse had run down alarmingly and she was in a state of collapse. An enema of brandy and egg yolk and milk (the yolk of one egg, a dessert-spoonful of brandy and two ounces of milk) was given per rectum and repeated every two hours. Hot bottles were placed around the trunk and extremities. She was allowed to suck ice, but nothing else was given her by the mouth for 48 hours. After the first rectal injection the patient rallied and continued to improve. Beyond a little burning pain in the wound the operation was followed by a complete subsidence of the fatally threatening peritonitis and absolute relief of all pain, a complete lowering of febrile temperature and the most refreshing sleep. Nothing could have been more gratifying than her condition for the first 48 hours after the laparotomy. Within eight hours of the operation the patient voided urine, and within 20 hours the bowels moved naturally. On the second day after the operation, after the removal of the dressings, the patient began to suffer with a teasing sense of twitchings in the wound, but this was due to flatulence, as it was relieved by a dose of oil of turpentine. This was accompanied by some degree of restlessness and sleeplessness, which were combated by Battley's sedative.

The diet after the first 48 hours (when the rectal feeding ceased) was soup, sago, milk, water and grapes, and this was continued till the eighth day after the operation, when light solid food was allowed. The outer stitches were removed on the eighth day, and the wound was found healed by first intention, save in a spot over one of the deeper sutures. From this place a little pus oozed for a few days, and then I closed the gap with a horsehair stitch and it healed at once. There is nothing further of special interest to note, save that the subsequent convalescence of the patient was un-

marked by a single bad symptom. It is of importance to remark, from a clinical as well as a physiological and anatomical point of view, that the patient had a free and painless menstruation 34 days after the operation. It may be interesting to mention that on the fourteenth day after the operation she was well enough to sit up, that she left her bed on the twentieth day, and was going about in her carriage on the thirtieth day, though she underwent so severe a surgical operation for a serious and critical malady which threatened to destroy her life.

This case is further worthy of record among the few successful ones of its kind that have been performed in India.

#### LITERARY NOTE.

THE Rebman Publishing Coy.'s new books include a new "Pocket Formulary for the Treatment of Diseases in Children," by Dr. L. Freyberger, of the Great Northern Central Hospital, London; and a work on "Surgical Diagnosis and Treatment," by J. W. Macdonald, M.D., Edinburgh. They also announce the completion of their "Pictorial Atlas of Skin Diseases" (St. Louis' Hospital Museum, Paris), edited by J. J. Pringle, M.B., F.R.C.P.

#### A CURIOUS LITERARY COINCIDENCE.

It is rather curious that *Trewinnott of Guy's*, the first book published by Mr. John Long, the new publisher, should be by Mrs. Coulson Kernahan, whose husband's work, *The Child, the Wise Man and the Devil*, was selected by Mr. James Bowden as the first book he issued. A feature which marks out *Trewinnott of Guy's* from the generality of novels is that it deals with medical life, concerning which it is strange how few stories have been written. The dedication has been accepted by Sir Samuel Wilks, Bart., President of the Royal College of Physicians, with whom Mrs. Kernahan's first husband, the late G. T. Bettany of Guy's Hospital and Caius College, Cambridge, collaborated in writing the History of Guy's Hospital. Her first novel, *The House of Rimmon*, was an emphatic success, three editions being sold, so her new work will be looked forward to with much interest in literary and medical circles.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England.*  
Part I.—1895. Ditto, Part II.—1897. Presented to both Houses of Parliament.

[FIRST NOTICE.]

THESE two volumes, which are presented to us in the unattractive form of two Blue Books of considerable bulk, contain information of inestimable value to the medical profession, especially to those members of the profession whose special duties lie in the department of State Medicine. We have noticed the bulk of these volumes, but it is right to add that the greater portion of both consists of detailed tables concerning each and all of the registration districts in England and Wales. These tables form the foundation and contain the proofs of the statements made in the Reports prefixed to the volumes. The Reports contain the pith of the whole matter, and convey all the information required by any reader, and we hope they may at some future time appear as a separate work by Dr. John Tatham, the accomplished Superintendent of Statistics at the English General Register Office.

The field of investigation which Dr. Tatham had before him is of unrivalled extent; no less than fifty-five years of the Vital Statistics of England and Wales are laid under contribution. No such opportunity for analysing, investigating, fixing data, and drawing conclusions has ever before been afforded to any vital statistician in the world, and no one has ever taken better advantage of his opportunities than has Dr. Tatham. The Reports before us appear under the modest titles of Letters to the Registrar-General. The first letter is styled "On the Mortality in England and Wales during the period of ten years, 1881-90;" the second "On the Mortality of Males engaged in certain occupations in the three years, 1890-92, and on an English Healthy District Life-Table for the ten years, 1881-90."



We have no hesitation in stating that these two letters are the most important essays on the branches of Vital Statistics to which they refer which have ever been published. We do not in any way wish to write of the manner the work has been done to the disparagement of Dr. Tatham's eminent predecessors, Dr. Farr and Dr. William Ogle. Those writers had nothing like the opportunities Dr. Tatham has had, and (especially Dr. Farr) had many difficulties to contend with which have not presented themselves to Dr. Tatham, and which, indeed, were removed by the efforts of his predecessors. Nevertheless, Dr. Tatham has had numerous difficulties to meet, many of which he has overcome, and a number of pitfalls to avoid. He seems to have thoroughly appreciated the difficulties, and, we think, has escaped the numerous traps always in the way of the vital statistician, in common with all statisticians.

Dr. Tatham does full justice to the work of his predecessors at Somerset House, and thus states the preparations which his predecessor, Dr. Ogle, had made for the work he has so ably carried out:—

“In the course of his preparations for taking the census of 1891, Dr. Ogle projected a scheme for ascertaining, by appeal to a basis of fact larger and more trustworthy than any previously available, the effect of certain definite occupations on the health and longevity of persons engaged therein. Complete records of the deaths of males over fifteen years of age, occurring in England and Wales during the three years 1890–2, were thought to be not more than sufficient for this investigation; accordingly these deaths, numbering more than half a million, have been extracted from the registers, and by means of the population figures obtained at the last census, the rates of mortality from several different causes have been worked out for a large number of occupations.”

Dr. Tatham thus acknowledges the assistance he has had from his medical brethren, and insists upon the importance of his work in regard to Preventive Medicine:—

“For the unique and valuable fund of information respecting deaths and their causes, which throughout the last half-century has been accumulating in the General Register Office, the State is manifestly indebted to the generous co-operation of the medical profession; failing which, the organisation of a system of vital statistics which should be worthy of the English nation would have



been impossible. It is therefore clearly incumbent on the officer who is responsible for the classification and analysis of the national mortality records to take care that every detail shall be utilised which may serve to increase our knowledge of the intimate nature of preventable diseases, and may thus tend to diminish their prevalence, as well as to mitigate their baneful effects on human health and life.

“Influenced by the above-mentioned considerations, I have striven to develop to the utmost the practical value of these volumes as a work of reference for students of Preventive Medicine: for I feel assured that to have succeeded in this endeavour would constitute the highest tribute I could offer to the memory of Dr. William Farr, whose life-long labours in behalf of that science which must ever be identified with his name still continue to influence beneficially the health conditions of his fellow-men. I trust that I may venture to entertain the hope that these volumes may be regarded as a not unworthy contribution to the series of supplementary reports, of which the first and second were written by Dr. Farr himself, and the third was from the pen of my eminent predecessor, Dr. Wm. Ogle.”

The hope expressed in the foregoing quotation has been amply fulfilled.

The first point discussed by Dr. Tatham is the changes which have taken place in the death-rate. These are somewhat striking, and are best stated in the writer's own words:—

*“Changes in the Death-rate of England and Wales.”*

“In the decennial period, 1871–80, there had occurred a mortality equal to 21·27 annual deaths, from all causes, in each thousand of the population. In the succeeding ten years—namely, the period to which the present volume relates—the mean annual proportion fell to 19·08 in a thousand. This decline in the mortality at all ages was shared by both sexes in almost equal proportions; the rate among males having fallen by 10·6 per cent., and that among females by 10·0 per cent. The figures show a decreased mortality among *females* at every one of the age-periods into which the span of life has been divided for the purposes of the Registrar-General's Reports, and among *males*, a decrease at all but the age-period 65–75 years. The experience of 1881–90, although agreeing with that of the preceding decennium in showing a greater reduction of mortality at the earlier ages, nevertheless differs from it in other important respects. For example, Dr. Ogle, commenting, in the last Decennial Supplement, on the varying incidence of mortality at the several ages, showed that whilst the rates had fallen at the earlier periods of life, they had risen at the later periods. As has been already stated, this was by no means the case in the decennium

under present notice, where a decrease was observed in both sexes at every age-period save one. Again, as compared with the mortality in the preceding decennium, the rate among females in 1871-80 was found to have decreased more rapidly than among males; this inequality has now been redressed, for in 1881-90 the male rate decreased actually faster than the female. Perhaps, however, the most significant difference between the two sets of figures lies in the fact that whereas in 1871-80 there had been a considerable rise in the male mortality after the age of 45, and in the female mortality after 55, recent figures show that this blemish has been almost completely removed, the only rise of mortality in the whole course of life during 1881-90 having been the trivial one of less than 1 per cent. at the age group 65-75 among males.

“In the recent decennium the mortality among infants under one year of age, which is generally accepted as the most sensitive test of the health of a given population, has shown a decline. The rate of mortality among infants of both sexes under the age of twelve months was equal to 142 per 1,000 births registered, as compared with 149 per 1,000 in the preceding decennium. In 1881-90 the infantile rate among males was equal to 155 per 1,000 births, and among females to 128 per 1,000; the rates in 1871-80 having been 163 and 134 respectively.”

While a considerable proportion of the diminished death-rate is attributed to improved sanitation, the author points out that some of it is due to the alterations in the age constitution of the population, owing to the diminution of the birth-rate from 35·6 per 1,000 in 1878 to 30·2 in 1890. These alterations are discussed, and it is pointed out that the diminution of the mortality is not so great as it would appear from the “crude” death-rates. If the age constitution of the population had been the same in the decennium 1871-80 as it was in 1881-90, the death-rate in the former period would have been 20·84 instead of 21·27.

Dr. Tatham next proceeds to consider the effect of this diminished death-rate on the expectation of life, and gives a new English Life-Table based on calculations made on the statistics for the decade 1881-90.

Our space does not permit of reprinting the valuable series of life tables contained in these volumes, but in order to present to our readers the main facts regarding the new and the old life-tables, and the changes which have taken place in the expectation of life in England and Wales for each sex, we give portions of the tables relating to this subject:—

Comparison of Three English Life-Tables, based respectively upon  
the Mortality in 1838-54, in 1871-80, and in 1881-90.

## MALES.

Age	Mean After-lifetime (Expectation of Life)			Age	Mean After-lifetime (Expectation of Life)		
	1838-54	1871-80	1881-90		1838-54	1871-80	1881-90
0	39.91	41.35	43.66	51	18.90	18.31	18.19
1	46.65	48.05	50.97	52	18.28	17.71	17.57
2	48.83	50.14	53.04	53	17.67	17.12	16.95
3	49.61	50.86	53.32	54	17.06	16.53	16.34
4	49.81	51.01	53.15	55	16.45	15.95	15.74
5	49.71	50.87	52.75	56	15.86	15.37	15.15
6	49.39	50.38	52.19	57	15.26	14.80	14.57
7	48.92	49.77	51.50	58	14.68	14.24	13.99
8	48.37	49.10	50.73	59	14.10	13.68	13.43
9	47.74	48.37	49.88	60	13.53	13.14	12.88
10	47.05	47.60	49.00	61	12.96	12.60	12.34
11	46.31	46.79	48.10	62	12.41	12.07	11.81
12	45.54	45.96	47.18	63	11.87	11.56	11.30
13	44.76	45.11	46.27	64	11.34	11.05	10.80
14	43.97	44.26	45.36	65	10.82	10.55	10.31
15	43.18	43.41	44.47	66	10.32	10.07	9.83
16	42.40	42.58	43.59	67	9.83	9.60	9.36
17	41.64	41.76	42.74	68	9.36	9.14	8.91
18	40.90	40.96	41.90	69	8.90	8.70	8.47
19	40.17	40.17	41.08	70	8.45	8.27	8.04
20	39.48	39.40	40.27	71	8.03	7.85	7.63
21	38.80	38.64	39.46	72	7.62	7.45	7.23
22	38.13	37.89	38.66	73	7.22	7.07	6.84
23	37.46	37.15	37.86	74	6.85	6.70	6.46
24	36.79	36.41	37.07	75	6.49	6.34	6.10
25	36.12	35.68	36.28	76	6.15	6.00	5.76
26	35.44	34.96	35.51	77	5.82	5.68	5.43
27	34.77	34.24	34.75	78	5.51	5.37	5.11
28	34.10	33.52	34.00	79	5.21	5.07	4.81
29	33.43	32.81	33.26	80	4.93	4.79	4.52
30	32.76	32.10	32.52	81	4.66	4.51	4.25
31	32.09	31.40	31.79	82	4.41	4.26	3.99
32	31.42	30.71	31.06	83	4.17	4.01	3.74
33	30.74	30.01	30.34	84	3.95	3.78	3.51
34	30.07	29.33	29.62	85	3.73	3.56	3.29
35	29.40	28.64	28.91	86	3.53	3.36	3.08
36	28.73	27.96	28.20	87	3.34	3.17	2.89
37	28.06	27.29	27.50	88	3.16	2.99	2.70
38	27.39	26.62	26.80	89	3.00	2.82	2.53
39	26.72	25.96	26.11	90	2.84	2.66	2.37
40	26.06	25.30	25.42	91	2.69	2.51	2.22
41	25.39	24.65	24.74	92	2.55	2.37	2.08
42	24.73	24.00	24.06	93	2.41	2.24	1.95
43	24.07	23.35	23.39	94	2.29	2.12	1.83
44	23.41	22.71	22.72	95	2.17	2.01	1.72
45	22.76	22.07	22.06	96	2.06	1.90	1.61
46	22.11	21.44	21.40	97	1.95	1.81	1.51
47	21.46	20.80	20.75	98	1.85	1.72	1.42
48	20.82	20.18	20.10	99	1.76	1.65	1.33
49	20.17	19.55	19.46	100	1.68	1.61	1.24
50	19.54	18.93	18.82				

Comparison of Three English Life-Tables, based respectively upon the Mortality in 1838-54, in 1871-80, and in 1881-90.

FEMALES.

Age	Mean After-lifetime Expectation of Life)			Age	Mean After-lifetime (Expectation of Life)		
	1838-54	1871-80	1881-90		1838-54	1871-80	1881-90
0	41.85	44.62	47.18	51	20.09	20.01	19.88
1	47.81	50.14	53.24	52	19.42	19.34	19.20
2	49.40	52.22	55.18	53	18.75	18.66	18.54
3	50.20	52.99	55.46	54	18.08	17.98	17.88
4	50.43	53.20	55.31	55	17.43	17.33	17.23
5	50.33	53.08	54.92	56	16.79	16.69	16.58
6	50.00	52.56	54.35	57	16.17	16.06	15.95
7	49.53	51.94	53.65	58	15.55	15.45	15.32
8	48.98	51.26	52.85	59	14.94	14.84	14.71
9	48.35	50.53	52.00	60	14.34	14.24	14.10
10	47.67	49.76	51.10	61	13.75	13.65	13.51
11	46.95	48.96	50.19	62	13.17	13.08	12.93
12	46.20	48.18	49.26	63	12.60	12.51	12.36
13	45.44	47.30	48.35	64	12.05	11.96	11.80
14	44.66	46.47	47.44	65	11.51	11.42	11.26
15	43.90	45.63	46.55	66	10.98	10.90	10.73
16	43.14	44.81	45.69	67	10.47	10.39	10.22
17	42.40	44.00	44.85	68	9.97	9.89	9.72
18	41.67	43.21	44.03	69	9.48	9.41	9.24
19	40.97	42.43	43.22	70	9.02	8.95	8.77
20	40.29	41.66	42.42	71	8.57	8.50	8.32
21	39.63	40.92	41.63	72	8.13	8.07	7.88
22	38.98	40.18	40.84	73	7.71	7.65	7.47
23	38.33	39.44	40.05	74	7.31	7.25	7.06
24	37.68	38.71	39.27	75	6.93	6.87	6.68
25	37.04	37.98	38.50	76	6.56	6.51	6.31
26	36.39	37.26	37.73	77	6.21	6.16	5.96
27	35.75	36.54	36.98	78	5.88	5.82	5.63
28	35.10	35.83	36.23	79	5.56	5.50	5.31
29	34.46	35.11	35.50	80	5.26	5.20	5.00
30	33.81	34.41	34.76	81	4.98	4.90	4.72
31	33.17	33.70	34.04	82	4.71	4.63	4.44
32	32.53	33.00	33.31	83	4.45	4.37	4.19
33	31.88	32.30	32.59	84	4.21	4.12	3.94
34	31.23	31.60	31.88	85	3.98	3.88	3.71
35	30.59	30.90	31.16	86	3.76	3.66	3.49
36	29.94	30.21	30.45	87	3.56	3.46	3.29
37	29.29	29.52	29.73	88	3.36	3.26	3.10
38	28.64	28.83	29.02	89	3.18	3.08	2.92
39	27.99	28.15	28.31	90	3.01	2.90	2.75
40	27.34	27.46	27.60	91	2.85	2.74	2.59
41	26.69	26.78	26.89	92	2.70	2.58	2.44
42	26.08	26.10	26.17	93	2.55	2.44	2.30
43	25.38	25.42	25.46	94	2.42	2.30	2.17
44	24.72	24.74	24.75	95	2.29	2.17	2.05
45	24.06	24.06	24.05	96	2.17	2.11	1.93
46	23.40	23.38	23.34	97	2.06	2.03	1.82
47	22.74	22.71	22.64	98	1.96	1.83	1.72
48	22.08	22.03	21.94	99	1.86	1.73	1.63
49	21.42	21.36	21.24	100	1.76	1.62	1.54
50	20.75	20.68	20.56				

"A Life-Table based on the mortality in the ten years, 1871-80, was published in the last Decennial Report. The changes of the death-rate during the decennium 1881-90, which have already been noted, suggest, that since 1880, a further increase in the average lifetime of the population has taken place. The new Life-Tables show that this has actually been the case.

The following remarks of Dr. Tatham show the main results arrived at from an examination of his new tables:—

"*Males.*—By the Table of 1838-54, a million males born are reduced to half a million during the 45th year of age; by the Table of 1871-80 this amount of reduction is not reached until the 48th year, and by the new Table it is further postponed until the 52nd year. At the end of the first year of age the number of survivors by the new Table occupies an intermediate position between the numbers by the two previous Tables; at every other age until 79 the new Table shows a larger number of survivors than is shown by either of the older Tables, from age 84 onwards the survivors are fewer by the new Table than by either of the others. This change is probably due, in part at least, to more accurate statement of age in recent than in earlier years.

"The average life-time of males, or the expectation of life at birth, which had been 39·91 years by the first of the three Life-Tables, and 41·35 years by the second, is further increased by the new Life-Table to 48·66 years; that is to say, a male exposed throughout life to the rate of mortality obtaining in England and Wales in 1881-90, would on an average live 2·31 years longer than he would have lived had he been subject to the rates prevalent in 1871-80, and 8·75 years longer than he would have lived had he been subject to the rates prevalent in 1838-54. In the last Decennial Report it was shown that the expectations of life among males by the Life-Table therein published were higher than those by the earlier Tables for ages below 19, equal thereto at age 19, and lower at all subsequent ages. The new Life-Table shows improved expectations of life, compared with those in the earlier Tables, up to 26 years of age; from age 27 until age 44 the expectations are lower than those in the first Table, but higher than those in the 1871-80 Table; for ages 45 and upwards the expectations of life are lower by the new Table than by either of the others.

"According to the first Life-Table, the 495,770 survivors at age 45, out of a million males born, will live about 11,284,000 years

of life, or an average of 22·76 years each ; according to the second Life-Table the 522,374 survivors at the same age will live about 11,529,000 years of life, or an average of 22·07 years each ; and according to the new Life-Table the 564,437 survivors at the same age will live 12,451,000 years of life, or an average of 22·06 years each. The successive additions to the working time of life may be shown in a striking form by considering the years lived between the ages 20 and 60. A short calculation shows that the average numbers of years lived between these limits of age by each male born are 20·92, 22·00, and 23·56, respectively, according to the three Life-Tables.

*"Females.*—By the two earlier Tables a million female children born were reduced to half a million in the 47th and 53rd years of age respectively ; by the New Table this amount of reduction is not reached until the 57th year. As in the case of males, the number of infants surviving at the end of the first year of life by the new Table is intermediate between the numbers similarly surviving by the earlier Tables. At all other ages until 85 inclusive the numbers surviving are greater by the new Table than by either of the others ; but as is also the case among males, the numbers of survivors at extreme ages diminish more rapidly by the new Table than by either of the older ones. The expectation of life at birth, which had been 41·85 and 44·62 years respectively in the earlier Tables, is further increased by the new Table to 47·18 years. The expectations at the several ages up to 44 years are greater by the new Table than by either of the others. At age 44 and again at age 45 the expectations of life by the three Tables are practically equal, being 24·72, 24·74, and 24·75 respectively at age 44, and 24·06, 24·06, and 24·05 at age 45. At all ages beyond 45 the expectations of life are less by the new Table than by either of the previous Tables. The average numbers of years lived between the ages 20 and 60 by each female born are 21·65, 23·48, and 25·12 by the three Life-Tables respectively.

Dr. Tatham, in his second volume, continues the discussion of the subject of life-tables, and devotes a section to the consideration of "A new Healthy District Life-Table." It is rather unfortunate for his readers that these two branches of the subject of life-tables should have been separated by various other matters—to which we shall refer in a future notice—and by an interval of two years ; but the exigencies of time, and of the arrangements of a large statistical

department, left our author no choice in the matter. We hope that, when these valuable papers come to be republished—which we trust they will—all the subjects connected with Life-Tables will be discussed continuously.

In introducing this branch of the subject Dr. Tatham writes:—

“The general death-rate of England and Wales in 1881–90 was almost exactly 19 per 1,000. After allowing for differences of age and sex constitution, about one-sixth part of the population were subject to death-rates differing from the mean rates by not more than 1 per 1,000, either in excess or in defect, one-third were subject to death-rates ranging from 17 to 21 per 1,000 (within 2 per 1,000 of the mean), and rather more than one-half were subject to death-rates ranging from 16 to 22 (within 3 per 1,000 of the mean). The death-rates of nearly one-fourth of the population ranged from 12 to 16 per 1,000, and those of an almost equal number ranged from 22 to 36.

“Speaking generally, districts with low rates of mortality may be called ‘healthy,’ while those with high rates must be considered ‘unhealthy.’ For the present it will be advisable to designate as healthy only those districts with the lowest death-rates, and to regard all other districts as more or less unhealthy, the excess in the death-rates over those of healthy districts constituting the measure of unhealthiness. But in any case only *comparative* healthiness can be dealt with, and the line dividing districts which are to be taken as healthy from those which are to be taken as unhealthy must always be an arbitrary one. . . .

“As might have been anticipated, the districts selected are either mainly rural, or are such as consist of small towns with rural surroundings.”

Details are given as to the areas selected as healthy.

Dr. Farr, in a paper read before the Royal Society in 1859, dealt with a life-table founded on 63 “healthiest districts” in England, having a death-rate of 17 per 1,000, or under. These districts contained a population of about a million according to the Census of 1851, and the life-table for these “healthy districts,” as Dr. Farr termed them, was founded on the mortality statistics for the years 1849–53:—

“Continued improvement in the public health since 1850 has made it possible to adopt a more exclusive standard of selection for the purposes of a new healthy district life-table, and at the same



time to place the table on a basis much wider than that which had been available for its predecessor; for, whereas in 1841-50 less than 6 per cent. of the total population lived in districts the crude death-rates in which were below 17·5 per 1,000, in 1881-90, on the other hand, no less than 25 per cent. of the population lived in districts the crude death-rates in which fell below 17·0 per 1,000, and 4½ per cent. in districts the crude death-rates in which did not reach 15·0 per 1,000."

It is impossible, in the space to which this article must necessarily be limited, to give *in extenso* all the carefully-elaborated details for correction as to age, sex, &c., which Dr. Tatham has carefully considered and applied; the result, however, is thus expressed by the author:—

"After every care has been used to secure an accurate presentation of the facts, 263 districts with a mean aggregate population of 4,606,503 persons, or about one-sixth of the whole population, had death-rates below 15 per 1,000 in 1881-90. The new Healthy District Life-Table has been constructed on the mortality experience of these 263 districts through the decennium. This table is therefore calculated on 46 millions years of life, a basis more than nine times as great as that of the older table. Had the line been drawn at districts with corrected rates under 14 per 1,000 in 1881-90, an aggregate of 122 districts, with more than 17 million years of life, would have been obtained; but on full consideration it was thought better to adopt the wider basis. The new Healthy District Life-Table, then, is a record of that sixth part of the population of the country which in 1881-90 experienced the lowest rates of mortality."

Dr. Tatham then refers to his well-known Manchester Life-Table, constructed when he was Medical Officer of Health of that city, which serves as a notable example of the splendid work to help the cause of the Public Health and promote State Medicine, which may be performed by an enlightened sanitary authority, under the advice of an able Medical Officer of Health. The leading columns of the Healthy District Life-Tables, under the heading of "Selected Healthy Districts," are placed in conjunction with similar columns taken from the life-tables of "England and Wales" for 1838-54, 1871-80, 1881-90, and "Manchester Township." We give here the most important—namely, the Expectation of Life-Table for Males and for Females:—



Expectations of Life : Comparison of Six Life Tables.—MALES.

Age	Mean After-lifetime (Expectation of Life)						Age
	England and Wales			M'chester Township	Selected Healthy Districts		
	1838-54	1871-80	1881-90		1849-53	1881-90	
0	39.91	41.85	43.68	28.78	48.56	51.48	0
1	46.65	48.05	50.97	36.31	53.70	57.39	1
2	48.83	50.14	53.04	39.78	54.64	58.35	2
3	49.61	50.86	53.32	40.62	54.84	58.12	3
4	49.81	51.01	53.15	40.80	54.69	57.64	4
5	49.71	50.87	52.75	40.53	54.39	57.05	5
6	49.39	50.38	52.19	40.05	53.94	56.37	6
7	48.92	49.77	51.50	39.49	53.39	55.61	7
8	48.37	49.10	50.73	38.86	52.76	54.80	8
9	47.74	48.37	49.88	38.19	52.04	53.95	9
10	47.05	47.60	49.00	37.47	51.28	53.07	10
11	46.31	46.79	48.10	36.73	50.48	52.18	11
12	45.54	45.96	47.18	35.95	49.66	51.28	12
13	44.76	45.11	46.27	35.16	48.84	50.39	13
14	43.97	44.26	45.36	34.36	48.02	49.50	14
15	43.18	43.41	44.47	33.56	47.20	48.62	15
16	42.40	42.58	43.59	32.76	46.40	47.76	16
17	41.64	41.76	42.74	31.96	45.62	46.90	17
18	40.90	40.96	41.90	31.17	44.86	46.06	18
19	40.17	40.17	41.08	30.38	44.12	45.23	19
20	39.48	39.40	40.27	29.61	43.40	44.41	20
21	38.80	38.64	39.46	28.86	42.70	43.59	21
22	38.13	37.89	38.66	28.12	42.00	42.78	22
23	37.46	37.15	37.86	27.40	41.31	41.98	23
24	36.79	36.41	37.07	26.69	40.62	41.18	24
25	36.12	35.68	36.28	26.00	39.93	40.39	25
26	35.44	34.96	35.51	25.33	39.23	39.61	26
27	34.77	34.24	34.75	24.68	38.54	38.83	27
28	34.10	33.52	34.00	24.04	37.84	38.06	28
29	33.43	32.81	33.26	23.42	37.15	37.29	29
30	32.76	32.10	32.52	22.82	36.45	36.52	30
31	32.09	31.40	31.79	22.23	35.74	35.76	31
32	31.42	30.71	31.06	21.66	35.04	34.99	32
33	30.74	30.01	30.34	21.10	34.33	34.23	33
34	30.07	29.33	29.62	20.55	33.62	33.47	34
35	29.40	28.64	28.91	20.01	32.90	32.70	35
36	28.73	27.96	28.20	19.48	32.18	31.94	36
37	28.06	27.29	27.50	18.95	31.46	31.18	37
38	27.39	26.62	26.80	18.43	30.74	30.43	38
39	26.72	25.96	26.11	17.91	30.02	29.67	39
40	26.06	25.30	25.42	17.39	29.29	28.92	40
41	25.39	24.65	24.74	16.88	28.56	28.17	41
42	24.73	24.00	24.06	16.38	27.84	27.42	42
43	24.07	23.35	23.39	15.89	27.11	26.67	43
44	23.41	22.71	22.72	15.40	26.38	25.93	44
45	22.76	22.07	22.06	14.93	25.65	25.19	45
46	22.11	21.44	21.40	14.46	24.92	24.45	46
47	21.46	20.80	20.75	14.01	24.20	23.71	47
48	20.82	20.18	20.10	13.58	23.47	22.98	48
49	20.17	19.55	19.46	13.17	22.75	22.25	49

Comparison of Six Life Tables.—MALES—continued.

Age	Mean After-lifetime (Expectation of Life)						Age
	England and Wales			M'chester Township	Selected Healthy Districts		
	1838-54	1871-80	1881-90		1849-53	1881-90	
50	19.54	18.93	18.82	12.77	22.03	21.53	50
51	18.90	18.31	18.19	12.39	21.32	20.81	51
52	18.28	17.71	17.57	12.02	20.61	20.10	52
53	17.67	17.12	16.95	11.66	19.90	19.39	53
54	17.06	16.53	16.34	11.31	19.19	18.69	54
55	16.45	15.95	15.74	10.96	18.49	18.00	55
56	15.86	15.37	15.15	10.62	17.79	17.31	56
57	15.26	14.80	14.57	10.28	17.10	16.63	57
58	14.68	14.24	13.99	9.93	16.41	15.96	58
59	14.10	13.68	13.43	9.58	15.73	15.30	59
60	13.53	13.14	12.88	9.24	15.06	14.66	60
61	12.96	12.60	12.34	8.88	14.41	14.02	61
62	12.41	12.07	11.81	8.53	13.78	13.40	62
63	11.87	11.56	11.30	8.18	13.17	12.79	63
64	11.34	11.05	10.80	7.83	12.58	12.19	64
65	10.82	10.55	10.31	7.48	12.00	11.60	65
66	10.32	10.07	9.83	7.14	11.44	11.03	66
67	9.83	9.60	9.36	6.82	10.90	10.47	67
68	9.36	9.14	8.91	6.50	10.37	9.92	68
69	8.90	8.70	8.47	6.20	9.86	9.39	69
70	8.45	8.27	8.04	5.91	9.37	8.88	70
71	8.03	7.85	7.63	5.64	8.89	8.38	71
72	7.62	7.45	7.23	5.39	8.43	7.90	72
73	7.22	7.07	6.84	5.16	7.98	7.43	73
74	6.85	6.70	6.46	4.94	7.56	6.99	74
75	6.49	6.34	6.10	4.74	7.15	6.56	75
76	6.15	6.00	5.76	4.56	6.76	6.15	76
77	5.82	5.68	5.43	4.40	6.39	5.76	77
78	5.51	5.37	5.11	4.25	6.03	5.39	78
79	5.21	5.07	4.81	4.11	5.69	5.03	79
80	4.93	4.79	4.52	3.98	5.37	4.70	80
81	4.66	4.51	4.25	3.86	5.07	4.39	81
82	4.41	4.26	3.99	3.76	4.78	4.09	82
83	4.17	4.01	3.74	3.65	4.51	3.81	83
84	3.95	3.78	3.51	3.55	4.25	3.55	84
85	3.73	3.56	3.29	3.45	4.00	3.30	85
86	3.53	3.36	3.08	3.34	3.78	3.07	86
87	3.34	3.17	2.89	3.24	3.56	2.86	87
88	3.16	2.99	2.70	3.14	3.36	2.66	88
89	3.00	2.82	2.53	3.04	3.17	2.48	89
90	2.84	2.66	2.37	2.94	2.99	2.31	90
91	2.69	2.51	2.22	2.83	2.82	2.15	91
92	2.55	2.37	2.08	2.72	2.66	2.00	92
93	2.41	2.24	1.95	2.60	2.52	1.86	93
94	2.29	2.12	1.83	2.46	2.39	1.74	94
95	2.17	2.01	1.72	2.29	2.25	1.62	95
96	2.06	1.90	1.61	2.08	2.13	1.52	96
97	1.95	1.81	1.51	1.79	2.00	1.42	97
98	1.85	1.72	1.42	1.40	1.89	1.33	98
99	1.76	1.65	1.33	0.83	1.78	1.25	99

Expectations of Life : Comparison of Six Life-Tables.—FEMALES.

Age	Mean After-lifetime (Expectation of Life)						Age
	England and Wales			M'chester Township	Selected Healthy Districts		
	1838-54	1871-80	1881-90		1849-53	1881-90	
0	41·85	44·62	47·18	32·67	49·45	54·04	0
1	47·31	50·14	53·24	39·33	53·47	58·57	1
2	49·40	52·22	55·18	42·62	54·21	59·36	2
3	50·20	52·99	55·46	43·54	54·41	59·11	3
4	50·43	53·20	55·31	43·81	54·25	58·62	4
5	50·33	53·08	54·92	43·66	53·93	58·01	5
6	50·00	52·56	54·35	43·30	53·48	57·31	6
7	49·53	51·94	53·65	42·82	52·93	56·54	7
8	48·98	51·26	52·85	42·26	52·30	55·72	8
9	48·35	50·53	52·00	41·63	51·61	54·88	9
10	47·67	49·76	51·10	40·94	50·88	54·01	10
11	46·95	48·96	50·19	40·21	50·12	53·14	11
12	46·20	48·13	49·26	39·45	49·34	52·27	12
13	45·44	47·30	48·35	38·66	48·57	51·39	13
14	44·66	46·47	47·44	37·86	47·80	50·53	14
15	43·90	45·63	46·55	37·05	47·04	49·68	15
16	43·14	44·81	45·69	36·24	46·29	48·84	16
17	42·40	44·00	44·85	35·44	45·57	48·02	17
18	41·67	43·21	44·03	34·64	44·86	47·21	18
19	40·97	42·43	43·22	33·86	44·17	46·41	19
20	40·29	41·66	42·42	33·08	43·50	45·62	20
21	39·63	40·92	41·63	32·32	42·83	44·83	21
22	38·98	40·18	40·84	31·57	42·16	44·04	22
23	38·33	39·44	40·05	30·84	41·50	43·26	23
24	37·68	38·71	39·27	30·12	40·84	42·48	24
25	37·04	37·98	38·50	29·41	40·17	41·71	25
26	36·39	37·26	37·73	28·72	39·51	40·94	26
27	35·75	36·54	36·98	28·03	38·85	40·18	27
28	35·10	35·83	36·23	27·36	38·18	39·42	28
29	34·46	35·11	35·50	26·70	37·52	38·67	29
30	33·81	34·41	34·76	26·04	36·85	37·91	30
31	33·17	33·70	34·04	25·40	36·17	37·16	31
32	32·53	33·00	33·31	24·76	35·50	36·41	32
33	31·88	32·30	32·59	24·13	34·82	35·66	33
34	31·23	31·60	31·88	23·51	34·14	34·91	34
35	30·59	30·90	31·16	22·90	33·46	34·16	35
36	29·94	30·21	30·45	22·29	32·77	33·41	36
37	29·29	29·52	29·73	21·69	32·08	32·65	37
38	28·64	28·83	29·02	21·10	31·39	31·90	38
39	27·99	28·15	28·31	20·52	30·69	31·14	39
40	27·34	27·46	27·60	19·95	30·00	30·38	40
41	26·69	26·78	26·89	19·38	29·29	29·62	41
42	26·03	26·10	26·17	18·83	28·59	28·86	42
43	25·38	25·42	25·46	18·28	27·88	28·09	43
44	24·72	24·74	24·75	17·73	27·17	27·32	44
45	24·06	24·06	24·05	17·20	26·46	26·56	45
46	23·40	23·38	23·34	16·67	25·75	25·79	46
47	22·74	22·71	22·64	16·15	25·03	25·03	47
48	22·08	22·03	21·94	15·63	24·31	24·26	48
49	21·42	21·36	21·24	15·12	23·59	23·50	49

## Comparison of Six Life-Tables.—FEMALES—continued.

Age	Mean After-lifetime (Expectation of Life)						Age
	England and Wales			M'chester Township	Selected Healthy Districts		
	1838-54	1871-80	1881-90		1849-53	1881-90	
50	20.75	20.68	20.56	14.62	22.87	22.75	50
51	20.09	20.01	19.88	14.12	22.15	22.00	51
52	19.42	19.34	19.20	13.64	21.42	21.25	52
53	18.75	18.66	18.54	13.16	20.70	20.52	53
54	18.08	17.98	17.88	12.70	19.97	19.79	54
55	17.43	17.33	17.23	12.25	19.24	19.06	55
56	16.79	16.69	16.58	11.81	18.51	18.34	56
57	16.17	16.06	15.95	11.39	17.77	17.63	57
58	15.55	15.45	15.32	10.98	17.06	16.93	58
59	14.94	14.84	14.71	10.59	16.36	16.24	59
60	14.34	14.24	14.10	10.21	15.69	15.56	60
61	13.75	13.65	13.51	9.85	15.04	14.90	61
62	13.17	13.08	12.93	9.50	14.40	14.24	62
63	12.60	12.51	12.36	9.17	13.78	13.60	63
64	12.05	11.96	11.80	8.85	13.17	12.98	64
65	11.51	11.42	11.26	8.54	12.58	12.36	65
66	10.98	10.90	10.73	8.25	12.01	11.76	66
67	10.47	10.39	10.22	7.97	11.44	11.18	67
68	9.97	9.89	9.72	7.70	10.90	10.61	68
69	9.48	9.41	9.24	7.44	10.37	10.06	69
70	9.02	8.95	8.77	7.18	9.85	9.53	70
71	8.57	8.50	8.32	6.94	9.35	9.02	71
72	8.13	8.07	7.88	6.70	8.87	8.52	72
73	7.71	7.65	7.47	6.47	8.40	8.04	73
74	7.31	7.25	7.06	6.24	7.95	7.58	74
75	6.93	6.87	6.68	6.03	7.52	7.14	75
76	6.56	6.51	6.31	5.82	7.11	6.72	76
77	6.21	6.16	5.96	5.61	6.72	6.32	77
78	5.88	5.82	5.63	5.41	6.34	5.94	78
79	5.56	5.50	5.31	5.21	5.98	5.57	79
80	5.26	5.20	5.00	5.02	5.64	5.23	80
81	4.98	4.90	4.72	4.83	5.32	4.90	81
82	4.71	4.63	4.44	4.65	5.01	4.59	82
83	4.45	4.37	4.19	4.47	4.72	4.30	83
84	4.21	4.12	3.94	4.30	4.44	4.03	84
85	3.98	3.88	3.71	4.13	4.19	3.77	85
86	3.76	3.66	3.49	3.96	3.94	3.53	86
87	3.56	3.46	3.29	3.80	3.71	3.30	87
88	3.36	3.26	3.10	3.64	3.50	3.09	88
89	3.18	3.08	2.92	3.49	3.30	2.89	89
90	3.01	2.90	2.75	3.34	3.11	2.71	90
91	2.85	2.74	2.59	3.19	2.93	2.54	91
92	2.70	2.58	2.44	3.04	2.76	2.37	92
93	2.55	2.44	2.30	2.90	2.61	2.23	93
94	2.42	2.30	2.17	2.76	2.46	2.09	94
95	2.20	2.17	2.05	2.62	2.33	1.96	95
96	2.17	2.11	1.93	2.47	2.19	1.84	96
97	2.06	2.03	1.82	2.31	2.08	1.72	97
98	1.96	1.83	1.72	2.14	1.96	1.62	98
99	1.86	1.73	1.63	1.93	1.84	1.53	99

"The most striking differences between the several life-tables are seen in the figures relating to young children; this is illustrated by the subjoined table, which shows the numbers, out of 100,000 of each sex born, who die at ages under 5 years.

	England and Wales			Manchester Township, 1881-90	Selected Healthy Districts	
	1838-54	1871-80	1881-90		1849-53	1881-90
Males - -	27,628	26,593	24,851	87,674	18,590	17,314
Females - -	24,945	23,738	21,676	83,677	16,444	14,483

"Using as a standard the deaths in the healthy districts in 1881-90, the mortality of males at these ages during the same period in England and Wales as a whole was 44 per cent. in excess, and in Manchester township it was 118 per cent. in excess. In the case of females the excess was still greater, being 50 per cent. in England and Wales, and 133 per cent. in Manchester township.

"According to the experience of the English life-table, it appears that 100,000 males born are reduced by death to 75,149 by the end of the fifth year, and that 100,000 females born are reduced by death to 78,324 at the same age. It appears, further, that in the healthy districts the same amounts of reduction are not reached until the age of 29 years among males, and until the age of 27 years among females. In Manchester township 100,000 males born are reduced to 62,326, and 100,000 females born are reduced to 66,323, at 5 years of age; but in the healthy districts these amounts of reduction are not reached until age 50 among males and age 48 among females.

"This saving of the lives of children in healthy districts is shown in another way by the expectations of life. In all the life-tables the expectation increases from birth until from two to four years of age, after which it decreases more or less steadily year by year. The cause of this is to be found in the comparatively heavy mortality in the earlier years of life. Thus, in the healthy districts, about 12 per cent. of the male children born die under one year of age, having lived an average of about one-third of a year each; the 88 per cent. who survive at one year of age live on an average nearly  $57\frac{1}{2}$  years more; that is to say, they die at a mean age of nearly  $58\frac{1}{2}$  years. The mean age at death of 100 persons of whom 12 live one-third of a year each, and 88 live  $58\frac{1}{2}$  years each, is easily found to be  $51\frac{1}{2}$  years.

which is the expectation of life of males in the healthy districts, at the moment of birth.

“As a general rule the expectation of life decreases as age advances. An increase of the expectation in passing from one age to a subsequent age indicates special risks of mortality in the interval. Persons who escape those risks thereby gained improved chances of future lifetime. The only example which the life-tables present of an expectation of life increasing as age advances is in the case of young children. From birth onwards the expectation of life at first increases, and afterwards decreases year by year through the remainder of life ; but, the better the health conditions represented by the life-table are, the less is the increase of the expectation, the sooner is the age of maximum expectation attained, and the sooner also is an age reached at which the expectation falls below that at birth. These points are illustrated by the following table :—

	England and Wales			Manchester Township 1881-90	Selected Healthy Districts	
	1838-54	1871-80	1881-90		1849-53	1881-90
MALES						
Expectation of life at birth -	39·91	41·35	43·66	28·78	48·56	51·48
Age of maximum expectation -	4	4	3	4	3	2
Increase of expecta- tion, from birth to age of maximum -	9·90	9·66	9·66	22·02	6·28	6·87
Year of life during which the expectation first falls below that at birth	24·8	23·4	22·1	41·8	12·9	13·3
	20th	18th	16th	22nd	14th	12th
FEMALES						
Expectation of life at birth -	41·85	44·63	47·18	32·67	49·45	54·04
Age of maximum expectation -	4	4	3	4	3	2
Increase of expecta- tion, from birth to age of maximum -	8·58	8·58	8·28	11·14	4·96	5·32
Year of life during which the expectation first falls below that at birth	20·5	19·2	17·6	34·1	10·0	9·8
	18th	17th	15th	21st	12th	10th

“An example from this table will illustrate the rule stated above: In 1881-90 the expectation of life of males in England and Wales was 43·66 years at birth, increasing to a maximum at 3 years of age, by which time it had received an increment of 9·66 years, or 22·1 per cent. of the expectation at birth ; after age 3 the expectation decreased, but did not fall below its original level until the 16th year of age. In the healthy districts the expectation was 51·48 years at birth, increasing to a maximum at 2 years of age, by which time it had received an increment of 6·87 years, or 13·3 per cent. only ; after age 2 the expectation decreased and fell below its original level in the 12th year of age.

“Even under the most favourable circumstances the mortality of infants under one year of age is very high. Reference to several life-tables shows that the same rate of death is not again experienced until the age of about 80 years. But the mortality in the first year of life is by no means evenly spread over that year—about half of it occurs in the first three months. The following table shows the survivors at three months, six months, and one year, out of 100,000 of each sex born in 1881-90; the deaths in the intervals are likewise shown:—

—	Born and Surviving at each Age			Dying in each interval of Age		
	England and Wales	Manchester Township	Selected Healthy Districts	England and Wales	Manchester Township	Selected Healthy Districts
<b>MALES</b>						
Born -	100,000	100,000	100,000	7,880	10,519	6,394
3 months -	92,120	89,481	93,606	8,225	4,894	2,161
6 months -	88,895	84,587	91,415	4,999	7,661	3,359
12 months -	88,896	76,926	88,086	—	—	—
<b>FEMALES</b>						
Born -	100,000	100,000	100,000	6,209	8,199	4,903
3 months -	93,791	91,801	95,097	2,658	4,315	1,718
6 months -	91,138	87,486	93,379	4,251	6,645	2,729
12 months -	86,887	80,841	90,650	—	—	—

“The figures in the last three columns show that, as measured by the ratio of deaths, the advantage of being born in a healthy district, great as it is in the first three months of life, is greater still in the remainder of the first year. As compared with the selected healthy districts, the whole country shows an excess of about one-fourth part, and Manchester township shows an excess of about two-thirds, in the mortality during the first three months of life; whilst, during the remainder of the first year of life, the proportional excess is in each case about doubled. These results curiously confirm some remarks in the Registrar-General’s 54th Annual Report. In that report two life-tables for the

first year of life were given, the one being based on the mortality in 1889-90-91 in three rural counties—Herefordshire, Wiltshire, and Dorsetshire; and the other on the mortality in three towns—Preston, Leicester, and Blackburn—which towns were selected on account of their high infantile mortality. The ages at death of all children under one year of age in these counties and towns respectively were abstracted in separate days up to one week, in separate weeks up to one month, and in separate months up to one year. From these facts the numbers of survivors out of 100,000 born were calculated at 1, 2, 3, &c., days, at 1, 2, 3, and 4 weeks, and at 1, 2, 3, &c., months. The tables are so interesting in connection with the present subject that it has been thought well to reprint them here:—

Age	Of 100,000 born the Numbers surviving at each age		Deaths in each successive Interval of Age		Annual Death-rates per 1,000 living in each successive Interval of Age		Death-rates in Towns to Death-rates in Counties taken as 100
	Three Rural Counties	Three Selected Towns	Three Rural Counties	Three Selected Towns	Three Rural Counties	Three Selected Towns	
<b>Days</b>							
0	100,000	100,000	1,002	1,198	8,674	4,399	120
1	98,998	98,802	296	485	1,094	1,797	164
2	98,702	98,317	281	344	1,042	1,279	123
3	98,421	97,978	282	286	859	879	102
4	98,189	97,737	152	144	565	589	95
5	98,037	97,593	120	180	448	488	109
6	97,917	97,468	89	109	297	405	136
7	97,837	97,354	—	—	—	—	—
<b>Weeks</b>							
0	100,000	100,000	2,168	2,646	1,145	1,406	128
1	97,837	97,354	478	773	258	416	164
2	97,364	96,581	462	832	247	451	183
3	96,902	95,749	381	646	179	353	197
4	96,571	95,103	—	—	—	—	—
<b>Months</b>							
0	100,000	100,000	3,488	4,947	804	1,021	127
1	96,512	95,053	985	2,180	128	272	221
2	95,527	92,928	707	2,049	89	268	301
3	94,820	90,874	678	1,967	85	262	308
4	94,147	88,907	618	1,749	79	239	303
5	93,529	87,158	461	1,584	59	220	373
6	93,068	85,574	483	1,475	62	209	337
7	92,585	84,099	488	1,226	63	176	279
8	92,102	82,878	454	1,317	59	192	325
9	91,648	81,556	476	1,220	62	181	292
10	91,172	80,336	455	1,110	60	167	278
11	90,717	79,226	484	1,029	57	157	275
12	90,288	78,197	—	—	—	—	—



“Although males and females are not separately dealt with in these tables, it will be seen that in the three age-groups 0-3 months, 3 months-6 months, and 6 months-1 year, the mortality in the three rural counties corresponds very closely with that in the healthy districts, while the mortality in the three towns is a little greater than that in Manchester township. The points of contrast between the rural and the town table are thus set forth in the report referred to:—

“In the first place, the aggregate infantile mortality is more than twice as high in the three towns as it is in the three rural counties, the exact figures being 21,803 deaths in the former to 9,717 in the latter, in each case out of 100,000 births.

“Secondly, the town rate is higher than the rural rate, not only in the aggregate for the year, but for each fraction of the year, with the exception—possibly but not certainly due to the insufficiently large basis of calculation—of the fourth, fifth, and sixth days of the first week, when the rates are practically equal.

“Thirdly, the periods when the town rates are most in excess of the rural rates are not the earliest weeks or months of infancy but the later months. In the first week of life the town rate exceeds the rural rate by 23 per cent., in the second week by 64 per cent., in the third week by 83 per cent., and in the fourth week by 97 per cent., showing a progressive or accumulative increase in the deleterious effects of town conditions as compared with rural conditions upon infantile life. The same result comes out when the rates for successive months in the counties and towns are examined. In the first month the town mortality is 27 per cent. above the rural rate, in the second month 121 per cent. above it; and the excess then goes on increasing until in the sixth month it amounts to no less than 273 per cent. This is the month in which the difference is greatest, though it remains throughout the rest of the year at a not very much lower point.

“The conditions of life, then, in such towns as Preston, Leicester and Blackburn, extremely destructive as they are throughout to infants in the first year of life, are much less so in the earliest periods of that year than later on, and are especially destructive after the second month is over.’

“The close agreement, at ages where comparison is possible, of the figures from which the above deductions were drawn, with the figures now obtained on a larger basis, is remarkable. Each set of facts independently strengthens the other; and there is little room for doubt that they represent with substantial accuracy the variations in infant mortality under favourable and under unfavourable conditions.”

Tables have been constructed with the object of exhibiting in a shortened form the course of a generation through life according to each of the life-tables. They show at each quinquennial age the number surviving out of 100,000 born. A table here follows showing the number, out of 1,000 living at each of several ages, who will live through the next 5 years, according to each life-table. We regret our limit of space precludes us from giving this table, the result of the study of which is as follows:—

“In England and Wales the average chance that a man aged 25 years would survive to age 30 has improved from .953 in 1838–54 to .959 in 1871–80, and to .965 in 1881–90; in the healthy districts of 1849–53 the chance was .961, while in those of 1881–90 it stood at .971; in the old township of Manchester in 1881–90 it was .928.

Again, from another table given in the text of the Report the following conclusions are drawn:—

“The number of births of males that would give 1,000 survivors at 15 years of age in the healthy districts would give 904 survivors at the same age in England and Wales as a whole, and 717 in Manchester township; the number of births of females that would give 1,000 survivors at 15 years of age in the healthy districts would give 915 survivors at the same age in England and Wales as a whole, and 737 in Manchester township. The columns for England and for Manchester township trace the cumulative effect of the *excess of mortality* above the healthy district standard. The figures for England are practically constant between ages 10 and 25 for males, and between ages 15 and 30 for females, indicating that at those ages the effect of the mortality on the number of survivors is practically the same in the country as a whole as it is in the selected districts.”

Dr. Tatham continues:—

“Passing reference has already been made to the columns in the life-table which show the ‘expectation of life,’ but this branch of the subject is important enough to demand more detailed treatment. In the tables given at pp. 213, 214, the expectation of life at each age is given for each of six life-tables. Among males the expectation at birth—in other words, the mean lifetime of all who are born—has ranged from 39.91 years to 43.66 years in England and

Wales within the period from 1838 to 1890; in the last ten years of this period it was as low as 28·78 years in Manchester township, while it stood at 51·48 in the selected healthy districts. A pertinent and useful inquiry is, 'At what ages are these years of life lived?' At first sight a contradiction in terms may appear to be involved in asking how many of the 28·78 years average lifetime of males in Manchester township, or of the 43·66 years average lifetime of males in England, or of the 51·48 years average lifetime of males in the healthy districts are lived after the age 65; but a moment's reference to a life-table shows that the question is perfectly reasonable. Turning to the healthy district life-table on page clxxxiv., as an example, it is seen that of 509,023 males born 60,648 die during the first year of life, whilst 448,375 are alive at the end of the year; 14,890 of these die during the second year, whilst 433,485 survive to the end of that year, and so on. The 60,648 males who die in the first year live, on an average, rather more than one-third of a year, or 21,509 years in all; thus the 'years of life,' lived between birth and 1 year of age, by 509,023 males born, are given by  $448,375 + 21,509 = 469,884$ . Again, of 323,079 who complete their forty-ninth year, 319,023 live throughout the fiftieth year, while 4,056 die in the course of that year, living on an average about half a year in the interval; thus the years of life lived between 49 and 50 years of age, by the same 509,023 males born, are given by  $319,023 + 2,028 = 321,051$ . The sum of these years of life for all ages represents the aggregate years of life lived by 509,023 males from birth to extreme old age; and the sum of any group of them represents the aggregate years of life lived at the ages indicated by the group. The following table has been constructed to show how the average years of life (denoted in the tables by the terms 'expectation of life at birth,' and 'mean lifetime') are distributed over several life periods in the six tables:—

Life Period	Age-limits of Period	Length of Period in Years	England and Wales			Manchester Township, 1881-90	Selected Healthy Districts	
			1838-54	1871-80	1881-90		1849-53	1881-90
MALES								
Infancy -	0-5	5	3-94	4-01	4-02	3-51	4-29	4-30
School age -	5-15	10	6-92	7-11	7-85	5-95	7-88	8-13
Adolescence -	15-25	10	6-51	6-79	7-12	5-55	7-50	7-89
Maturity -	25-35	10	5-95	6-29	6-69	4-90	6-95	7-49
	35-45	10	5-31	5-62	6-04	3-89	6-37	6-95
	45-55	10	4-54	4-76	5-16	2-71	5-72	6-25
	55-65	10	3-55	3-68	3-96	1-51	4-82	5-22
Decline -	65 and upwards	—	3-19	3-14	3-32	0-76	5-08	5-25
Total -	All ages	—	39-91	41-85	43-66	28-78	48-56	51-48
FEMALES								
Infancy -	0-5	5	4-07	4-14	4-17	3-71	4-39	4-43
School age -	5-15	10	7-19	7-40	7-68	6-32	8-07	8-41
Adolescence -	15-25	10	6-73	7-07	7-44	5-92	7-61	8-12
Maturity -	25-35	10	6-12	6-58	6-99	5-35	7-00	7-69
	35-45	10	5-46	5-95	6-38	4-50	6-37	7-15
	45-55	10	4-73	5-20	5-63	3-42	5-71	6-53
	55-65	10	3-82	4-21	4-55	2-16	4-89	5-60
Decline -	65 and upwards	—	3-73	4-07	4-34	1-29	5-41	6-11
Total -	All ages	—	41-85	44-62	47-18	32-67	49-45	54-04

"With two unimportant exceptions, the advantage incidental to the healthier periods or localities is shared by each sex at every age-group. On comparison of the three English life-tables with one another, or of the two healthy district tables with each other, the advantage in the healthier periods appears to increase up to, or a little beyond, middle age and then to decrease. On the other hand, in comparing life-tables of different localities but for the same period, the advantage of the healthier localities is found to increase steadily until old age. If the 50 years of age between 15 and 65 be taken to represent the effective or working period of life, the average length of the working period in years, and its proportion to the whole period of 50 years, by the six life-tables, for every child born, will be as follows:—

		England and Wales			Man- chester Township 1881-90	Selected Healthy Dis- tricts	
		1868-54	1871-80	1881-90		1840-53	1881-90
Average lifetime be- tween 15-65 years of age	Males	25·86	27·00	28·97	18·56	31·36	33·80
	Females	26·86	29·01	30·99	21·35	31·58	35·09
Percentage of the en- tire age period of 50 years, 15-65	Males	52	54	58	37	63	68
	Females	54	58	62	43	63	70

"Examination shows that the proportion of the total lifetime which is lived between the ages 25 and 55 differs very little from 40 per cent. in any of the life-tables. For males the proportions in the six life-tables all lie between 39·2 and 40·9, and the average is exactly 40 per cent.; for females the proportions all lie between 38·6 and 40·7, and the average is 39·6 per cent. It follows that in each of these six life-tables about 60 per cent. of the average lifetime is lived partly before 25 years of age, and partly after 55 years of age; and the distribution of this 60 per cent. between the earlier and the later ages would therefore enable us to distinguish between life-tables for healthy and for unhealthy districts or periods without referring to the respective mean lifetimes.

"The designations 'infancy,' 'school age,' 'adolescence,' 'maturity,' 'decline,' 'working period' have been used above as roughly but conveniently representing the several periods of life, and not as having any claims to scientific precision. Obviously

the period of decline must begin earlier in an unhealthy than in a healthy population ; but in order to determine how much earlier, it would be necessary to formulate a definition of 'decline,' which should bear some specified relation to figures in the life-table. For example, the expectation of life of males at age 65 by the latest English life-table is 10·31 years, and that of females is 11·26 years. If 'decline' be arbitrarily defined for males as 'the ages at which the expectation of life does not exceed 10·31 years,' and for females as 'the ages at which the expectation of life does not exceed 11·26 years,' then by the three life-tables for 1881-90 decline begins at 65 for each sex in England, at about 57 in Manchester township, and at about 67 in the selected healthy districts. The following table shows the distribution of the mean lifetime on this assumption according to the three life tables for 1881-90 :—

	Number of Years Lived			Per cent. of Total Lifetime		
	England and Wales	Manchester Township	Selected Healthy Districts	England and Wales	Manchester Township	Selected Healthy Districts
<b>MALES</b>						
Infancy and school age -	11·37	9·46	12·43	26·1	32·9	24·2
Adolescence and maturity -	28·97	17·44	34·68	66·3	60·6	67·3
Decline -	8·32	1·88	4·37	7·6	6·5	8·5
<b>Total</b> -	<b>48·66</b>	<b>28·78</b>	<b>51·48</b>	<b>100·0</b>	<b>100·0</b>	<b>100·0</b>
<b>FEMALES</b>						
Infancy and school age -	11·85	10·03	12·84	25·1	30·7	23·8
Adolescence and maturity -	30·99	19·73	36·05	65·7	60·4	66·7
Decline -	4·34	2·91	5·15	9·2	8·9	9·5
<b>Total</b> -	<b>47·18</b>	<b>32·67</b>	<b>54·04</b>	<b>100·0</b>	<b>100·0</b>	<b>100·0</b>

"Reckoned in this way the proportion of 'decline' to total lifetime differs but little in the three life-tables; but the healthier districts have this double advantage; that not only is their average

lifetime longer in itself, but a greater proportion of it belongs to what may be considered the effective working period of life."

In a future article it is our intention to deal with the other matters mentioned in Dr. Tatham's valuable "Letters."

(To be continued.)

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### SOME RECENT OPHTHALMOLOGICAL PUBLICATIONS.

1. *Nettleship's Diseases of the Eye.* A Manual for Students. Revised and Edited by W. T. HOLMES SPICER, F.R.C.S. Sixth Edition. London: J. & A. Churchill. 8vo. Pp. 465. 1897.
2. *Convergent Strabismus and its Treatment.* An Essay by EDWIN HOLTHOUSE, F.R.C.S. London: J. & A. Churchill. Pp. 177. 1897.
3. *Practical Handbook of the Diseases of the Eye.* By D. CHALMERS WATSON, M.B. With nine coloured Plates and twenty-four Illustrations in the text. Edinburgh: Wm. F. Clay. Cr. 8vo., pocket size. Pp. 248. 1897.
4. *Sight Testing for the G. P.* A Manual by which the General Practitioner can rapidly acquire the knowledge necessary to determine all errors of Refraction, and to prescribe Spectacles. By F. DAVIDSON.
5. *A Practical Guide to the Examination of the Eye, for Students and Junior Practitioners.* By SIMEON SNELL, F.R.C.S. Ed. With eighty-eight Illustrations. Young J. Pentland. 8vo. Pp. 177. 1898.

1. MR. NETTLESHIP'S manual is so well known, and has passed through so many editions, that a review of its contents and style is unnecessary; but we wish to compliment the editor of this edition upon the very satisfactory manner in which he has done his part, and maintained the high character which the previous editions have deservedly gained for this manual.

2. Mr. Holthouse's valuable and interesting essay will repay the reader who wishes to increase his knowledge of the complex conditions which comprise and cause the phenomena of convergent strabismus. It represents an amount of careful

observation and annotation of which its author may well be proud, and should do much to add certainty and accuracy to our conceptions of the phenomena with which it deals.

The essay is divided under six sections—

- I. General Considerations.
- II. The Previous History and its Influence in Monolateral Convergent Strabismus.
- III. The Refraction in Monolateral Convergent Strabismus.
- IV. The Vision in Monolateral Convergent Strabismus.
- V. Alternating Convergent Strabismus.
- VI. The Treatment of Convergent Strabismus.

Each of these subjects he treats in a straightforward and fearless manner, seeking only to establish the facts observed, not to bolster up preconceived ideas or theories.

The points raised and discussed are far too numerous and complicated to be satisfactorily discussed in a short review like this; but we wish to express to Mr. Holthouse our sense of the importance of such work as he has done, and to hope that he or others will continue the observations on the lines which he has adopted.

The book is well printed, and written in good readable style.

3. In his preface Dr. Watson says that he has tried "to give a concise and practical account of the more common diseases of the eye, and the methods employed in their diagnosis and treatment." He considers this book to be "a clinical *vade mecum*, as well as an introduction to the various standard works." He has based the work on the clinical teaching of Dr. Argyll Robertson, to whom also it is dedicated.

The author candidly admits that "in a work of this kind there are, necessarily, many imperfections;" but he has "aimed only at providing a reliable and practical guide to the study of eye diseases."

Of its kind, this is one of the best guides we have seen, but we do not very much like the too condensed form in which the information must necessarily be imparted in all such epitomies. Mental indigestion is sure to be the result in any student who relies solely upon this as a text-book of ophthalmic surgery; and although as a note-book it is an



excellent one, as a text-book it is quite unsuitable to the requirements of the student. It is more against the abuse of such publications as this that we wish to warn the student, for if they read no other work on ophthalmology but Dr. Watson's handbook, it is like living entirely on extract of beef. It may be excellent for certain purposes, but it is not fit to live on alone.

4. Who "F. Davidson" is we have been unable to discover, nor does he boast of any medical or scientific degree by which we can gauge his abilities.

The miserable little book to which he claims authorship bears a very attractive title, but we have failed entirely to find any justification in it for the statement that by its aid "*the G. P. can rapidly acquire the knowledge necessary to determine all errors of refraction.*"

It is entirely without illustration or diagram, its print is small, and its matter not always clearly put. We cannot, in the long list of books on the subject which annually are published, find one from which the G. P. would find greater difficulty in "acquiring the knowledge necessary to determine all errors of refraction." It can only serve the purpose of inducing him to attempt what is, in many cases, the most difficult and critical task which the ophthalmic surgeon has to perform, and may lead him into the gravest of errors—viz., the ordering of incorrect spectacles.

Such a publication as this may make Mr. Davidson's name known amongst general practitioners, but it has no other useful function.

5. This is not a treatise on ophthalmology in general, but, as Mr. Snell in his preface states, his experience with students has taught him that much of the initial difficulty they encounter in the study of ophthalmology depends on the fact that many of the methods employed for examining eye-patients differ so markedly from those they have become familiar with in the practical work of medicine and surgery, that it has been his object to describe the various methods of examination in such a manner and at such length as to be readily understood by the student. Illustrations have been freely introduced as being frequently more explicit than mere verbal description.

The book is well got up, nicely printed, with excellent illustrations (we are, however, rather sorry that the author has allowed his own likeness to appear in two of these). And we can highly recommend it to those for whom the writer intended it—viz., “Students and junior practitioners.”

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*Injuries and Diseases of the Ear, being Reprints of Papers on Otology.* By MACLEOD YEARSLEY, F.R.C.S. London: The Rebman Publishing Company. 8vo. Pp. 40. 1897.

THE author, in his preface, states that all the papers collected together in this little book have appeared before, but several have been re-written and added to since their first publication. The book consists of six entirely separate monographs on the following subjects:—

- I. On an Artificial Membrana Tympani.
- II. Foreign Bodies in the Ear and their Treatment.
- III. What not to do in Diseases of the Ear.
- IV. The Use of the Pneumatic Aural Speculum.
- V. On the Care of the Ear in Children.
- VI. Aural Reflexes.

These essays are all simply and well written, containing safe and useful information, and if there is not much that is very novel or startling in their contents, there is no advice which we do not heartily endorse.

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*A Surgical Handbook for the use of Students, Practitioners, House Surgeons, and Dressers.* By FRANCIS M. CAIRD, M.B., F.R.C.S. Edin.; and C. W. CATHCART, M.B., F.R.C.S., Eng. and Edin.; Assistant Surgeons, Royal Infirmary, Edinburgh. With very numerous Illustrations. London: Charles Griffin & Company, Ltd. 1897.

THE authors have very carefully revised the whole work in preparing this edition, the eighth. Twenty-eight new diagrams have been introduced, and these, along with much new matter in the text, have caused the addition of forty-three pages to this edition as compared with the last.

The fact that the book after a few years from its introduction has reached its eighth edition, tells that it is

appreciated and has met the wants of the Medical Profession for a concise, clear, and intelligible handbook. We cannot, however, agree with the authors that chloroform is best given from a towel; we consider an Esmarch or Skinner apparatus the better method of administration. With either of them the breathing can be as carefully watched as it could be with the use of a towel, and from our experience the chloroform can be more readily and cautiously administered. We draw attention to this because we think the recommendation of the towel is the only blot in an otherwise excellent article on anæsthetics—one which every student and house surgeon would do well to study carefully.

The chapter on antiseptics makes no mention of formic aldehyde, an antiseptic which we have freely used, and from our experience of the better-known chemicals of this class we can speak of its many advantages. The authors are, however, right in enumerating only antiseptics of which they have had personal experience, as the book is not an exhaustive treatise but simply a text-book.

Emergency cases are treated of in Chapter IX. No mention is made of aspiration of the bladder in retention of urine due to enlarged prostate—a method which saves much time, is easy of performance, and practically painless.

We indicate these few points which, we think, need notice in future editions, for we have little doubt the book will long continue to be a favourite with students and practitioners, as it deserves to be from its many excellencies.

*The Tallerman Treatment by Superheated Dry Air in Rheumatism, Gout, Rheumatic Arthritis, Stiff and Painful Joints, Sprains, Sciatica, and other Affections. Case Notes and Medical Reports, with numerous Illustrations. Edited by ARTHUR SHADWELL, M.A., M.B. Oxon., M.R.C.P. London: Baillière, Tindall & Cox. 1898.*

THIS book presents in a convenient form full and authoritative information respecting the Tallerman treatment, which, the preface tells us, is still very imperfectly known. That

hot, dry air was a powerful therapeutic agent has long been known, and for ages the Turkish bath was the nearest approach made towards the desired end of using hot, dry air.

Mr. Tallerman some five or six years ago succeeded in producing an apparatus by means of which hot, dry air could be applied to any part of the exterior of the body. A description of the apparatus is given, and its method of application is told in the book.

Good grounds exist for the belief that, properly applied, hot air can affect diseased tissues beneficially, and the related experiences of competent and trustworthy members of the medical profession go to show that as a therapeutic agent the value of hot, dry air has passed from the theoretical to the practical stage.

To the book itself we take exception. Its get up and illustrated cover have more the appearance of a glorified copy of Congreve's Balsamic Elixir volume of testimonials than that of a scientific work. We do not know anything whatever of Mr. Tallerman, but we cannot but condemn his method of appealing to the medical profession in a volume clothed in the garb of the rankest quackery.

His publishers, who occupy an honourable position as medical and scientific publishers, would never have recommended such a binding; it must have been the outcome of Mr. Tallerman's brain; and we regret that Dr. Shadwell should have allowed his name to appear as editor to a work so brought before his professional brethren.

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*Mastoid Abscesses and their Treatment.* By A. BROCA, M.D., Chirurgien des Hôpitaux de Paris, Professeur Agrégé de la Faculté de Médecine, Membre de la Société de Chirurgie; and F. LUBET-BARBON, M.D., Ancien Interne des Hôpitaux de Paris. Translated and edited from the French by HENRY J. CURTIS, B.Sc. and M.D., Lond.; F.R.C.S. With Eleven Coloured Illustrations. London: H. K. Lewis. 1897.

THE present work is a translation from the memoir entitled "Les Suppurations de l'Apophyse Mastoïde et leur traite-

ment," which was published in 1895, after having been awarded the Prix Meynot by the French Academy of Medicine in 1894, to which has been added the substance of a clinical lecture delivered in one of the London hospitals by a friend of the translator.

Of the four chapters of which the volume consists, the first deals with mastoid abscesses, the second with mastoid fistula, the third with chronic suppuration, and the fourth with results. The view adopted by the authors and the translator is that middle-ear affections are secondary infections by pyogenic organisms which inhabit the pharynx, where they grow readily, owing to the presence of lymphoid tissue which shelters them; spreading from this they often infect the middle ear.

In this view they follow the lines long since laid down in Dublin by W. H. Porter, on middle-ear disease following scarlatina—a pamphlet which the distinguished authors may perhaps be excused for not having read; but for M. Broca to adopt the views of M. Ambroise Paré, who described middle-ear inflammations as secondary affections, and looked upon mastoid suppuration when it followed such inflammation as a good sign, in that it was the forming of a complete fistula, and made no mention of the greatest of French surgeons, is incomprehensible.

For the translator there is the excuse that young men now-a-days feel that want of familiarity with the classics of medicine is no discredit.

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*The Year-Book of Treatment for 1898.* A Critical Review for Practitioners of Medicine and Surgery. London, Paris, Melbourne: Cassell & Co., Ltd.

FOR fourteen years this excellent year-book has presented a very readable digest of the progress made during the year in medicine. It has become a familiar and trusted guide to the busy man who wants facts, and has no time to weigh the relative merits of conflicting theories.

Success has attended the venture because all the elements of success were present. No section of medicine was unrepresented, and over each section a competent editor

presided, who arranged, classified, and edited in plain, clear language the practical facts that the busy practitioner requires. And in its pages he reads the experience of his fellow-practitioners, and is not bewildered by the day hallucinations of a German theorist.

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*Saint Thomas's Hospital Reports.* New Series. Edited by DR. HECTOR MACKENZIE and MR. G. A. MAKINS. Vol. XXV. London: J. & A. Churchill. 1897.

WE are always glad to see this annual report, and we read it with both pleasure and profit. But the pleasure is very considerably less and the profit is far from being what it should be owing to the absence of any reference to the choice of anæsthetics. If there is one thing more than another that the subscribers, especially the country ones, and old pupils of this great hospital seek information on it is anæsthetics.

You read surgical reports, you learn all facts that are necessary to know, also as to the antiseptic used—except the very important one of what anæsthetic was used and the reason of the preference. Specialty follows specialty with its report, and yet the anæsthetist is dumb; he of all others has nothing to say—no lesson to teach, no information to give.

The use of anæsthetics has become universal. Every member of the profession of medicine is supposed to know the relative advantages of ether, chloroform, and so forth. He is called upon to administer them, to watch the patient through the danger of anæsthesia, and if he is a conscientious and thoughtful man he subscribes for the Reports of the principal London hospitals, hoping, nay confident, that in them the very important subject of anæsthetics will be fully dealt with. Judge of his astonishment when he finds that this subject, which comes home to each of us—one on which so many lives daily depend—is ignored. It is almost incredible and it is shameful.

Fifty odd years have passed and the anæsthetists of the London hospitals have, to their great disgrace, allowed decade to follow decade and remained dumb on a subject

which called on them to cry aloud. Their talent was buried, and their reward cannot be other than condemnation.

Having freely expressed our disapproval of the absence of an anæsthetic report, we must, in all fairness, congratulate the staff on the up-to-date spirit which created an X-ray department. Of the papers, that on Polyneuritis by Dr. Turney, and Dr. Acland's on Compulsory Vaccination, most commend themselves to our notice.

Indeed, the reports from departments are now so numerous that our reading consists of columns of statistics, and we miss sadly the old-fashioned papers on practical therapeutics. They are shut out by electricity, X-rays, and bacteriology, and, like Charles Lamb, we like "old friends," and are inclined to resent the aggressive youngsters.

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*Medical and Surgical Reports of the Boston City Hospital.*

Eighth Series. Edited by G. B. SHATTUCK, M.D.; W. T. COUNCILMAN, M.D.; and HERBERT L. BURRELL, M.D. Boston: Published by the Trustees. 1897.

THE eighth series of the Medical and Surgical Reports of the Boston City Hospital appears as an annual publication. As might be expected, the volume is an up-to-date production, and contains a good and full article on X-rays and their adaptation to medical practice. There is also one on the anatomical and bacteriological study of acute and sub-acute nephritis.

Dr. Leary writes on "An Unusual Pathogenic Action of the Diphtheria Bacilli," which he illustrates with two cases. In the first, diphtheria bacilli appeared in a pustule on the finger of the physician who made an autopsy on a case of diphtheria, the second case is one of typhoid fever with parotiditis, in which bacilli were found in the cultures from the lungs.

We are pleased to know that the good work of the Hospital is appreciated. More sick apply for relief, and subscriptions are so generously bestowed that the authorities found it possible to increase the number of beds last year by one hundred and fifty. The Hospital



now has eight hundred and fifty-six beds, of which three hundred and one are in the contagious wards.

The volume forms a useful addition to medical literature, and is well worth careful study.

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*Transactions of the Chicago Pathological Society from December, 1895, to April, 1897. Vol. II. Chicago: American Medical Association Press. 1897.*

BADLY bound, and printed on glazed bad paper, in small type, this volume at once creates a prejudice against itself. And, as if to intensify this prejudice, there is no table of contents, and the index is printed in diamond or ruby, or some such microscopical type. If the Transactions are intended to be read they should be printed in type sufficiently large to allow of being read without straining the eyesight. Paper cannot be so scarce in Porkopolis as might be reasonably inferred from the small type of the diminutive octavo before us.

And yet, buried in the wretched volume are many excellent papers. We advisedly say buried, for it would require a Teufelsdorch to read it. Of the papers most deserving notice is Dr. Murphy's on fibro-myoma complicating pregnancy, and a paper on intestinal obstruction from an enterolith. Dr. Rie's paper on membranes discharged from the uterus is one of great medico-legal interest. That obscure pathological condition, "*Struma Gelatinosa*," is the title of a paper by Dr. M. L. Harris.

"Pernicious Malaria, with Relapse," is a carefully prepared and very suggestive paper by Dr. Herrick, in which he draws attention to the occurrence in this disease of convulsions oft repeated, which resemble the *petit mal* of epilepsy.

Dr. Stehman's paper on bovine tuberculosis follows closely on the lines of the Royal Commission appointed a few years since to investigate the subject, and we may add that he is a believer in tuberculin—some beliefs die hard.

Cerebral syphilis is the subject of Dr. Hessert's paper, and, as he well observes, the frequency and importance of syphilis of the nervous system is becoming more and more appreciated



and demands from us more careful observation of its earlier symptoms.

Dr. Preble's paper, "Relative Insufficiency of the Pulmonary Valves," is a deeply interesting study of one of our most obscure pathological conditions.

We have said enough to show that the book is worthy of large print and good paper, but to secure the treasure is like labouring in Klondike—terribly trying.

*Deuxième Session de l'Association française d'Urologie, Paris, 1897. Procès-Verbaux, Mémoires et Discussions publiés sous la direction de M. LE DOCTEUR DESNOS, Secrétaire-General. Avec 65 figures dans le texte. Paris: Octave Doin, Éditeur. 1898.*

WE congratulate our French professional brethren on the issue of this their second volume of the Transactions of the Society of Urinology—a society started for "the study of the urinary organs in both sexes."

The opening address was delivered by the President, Professor Guyon, who chose for his subject the Physiology and Pathology of Retention. He divides cases of retention occurring within the pelvis of the kidney, or within its capsule, into the aseptic and the septic, and each of these divisions he subdivides into complete and incomplete. The chemical composition is then reviewed, and in this connection the President considers the toxicity of urine. The address is a good summary of our existing knowledge of renal retention of urine and its results.

All forms of renal retention of urine, septic or aseptic, appear to do well when treated by nephrotomy, and the operation appears to be the treatment which most commends itself to the members of the Society.

Dr. Pousson, of Bordeaux, read a paper on the return of renal calculi after operation, which he illustrated with statistics.

M. Carrier, of Lille, read a paper on "The Operations practised on the Testicle and its Annexes for Hypertrophy of the Prostate," in which all these well-known operations are described in detail, and a historical account of their

introduction is given. M. Carlier also refers to M. Poncet's operation of supra-cystotomy and an artificial urethra; he does not describe the operation or its effects on enlarged prostate, neither does he make any mention of Dr. Hunter M'Guire, of Virginia, to whom we are indebted for the operation. Dr. M'Guire's account of the operation and the report of his cases appeared in the "Transactions of the American Surgical Association" before M. Poncet, of Lyons, performed or described his operation, which in no particular differs from that of the distinguished Virginian.

The prognostic value of varicocele in tumours of the kidney is the subject of an exhaustive paper by Dr. Leynen, who is inclined to think that the value of the sign is over-rated.

Dr. J. Marichess, of Odessa, contributes a paper on Primary Sarcoma of the Urethra, which interests because of its rarity. Notes on the Development of the Urethra, the Prostate, and the Bladder is an interesting paper for embryologists, but for the general surgeon is not of much practical value.

There are many interesting papers which space does not permit of notice. All the contributions and all the discussions show how carefully our French brethren make up their subject, and how clearly they place their views before the medical profession.

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*Lexique-Formulaire des Nouveautés Médicales.* Par le PROFESSEUR PAUL LEFERT. Paris: J. B. Baillière et Fils. 1898. 18mo. Pp. 336.

EACH day brings with it new discoveries in pathology, as well as in therapeutics. Medical nomenclature is constantly enlarging its borders and developing new terms. It is not easy to keep abreast of the increasing advance in scientific medicine, still less easy to annotate that progress and to remember the host of novel ideas which spring into being. This little volume includes papers, scattered through a considerable number of treatises and medical journals, which the most comprehensive and most modern dictionaries do not contain. To spare the worker researches, which may

be at times protracted and troublesome; to help the practitioner's memory—such is the object of the *Lexique-Formulaire des Nouveautés Médicales*.

In it the reader will find an analysis of the works on, a statement of the most recent discoveries and theories in, General Pathology, Pathological Anatomy, Pathological Physiology, Clinical and Therapeutical Medicine and Surgery; information as to new therapeutical methods, new remedies, and new operations.

The practice, which has been adopted, of giving to diseases the names of the authors who have described them, the numerous designations assigned to one and the same malady by various authors, render medical nomenclature very confusing, and the perusal of works on medicine often difficult. The author has explained all these designations and synonyms.

Under the proper names of the authors the diseases or the symptoms which they have described, the operations or the instruments which they have invented, will be found. Under the names of the diseases the reader will find a rapid review of their chief symptoms and information as to the new therapeutical agents employed against them. Under the names of remedies, their properties and uses, their doses for different ages, and the best method of employing them, together with several formulæ for their exhibition, will be found.

We are confident that the medical public will extend to this *Lexique-Formulaire* the same hearty reception they have accorded to Professor Paul Lefert's other works, and this little volume will find its appropriate place as well on the practitioner's table as in the student's library.

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*The Winter Meteorology of Egypt, and its Influence on Disease.* By H. E. LEIGH CANNEY, M.D. (Lond.); M.R.C.S. (Eng.); F.R. Met. Soc. London: Baillière, Tindall & Cox. 1897. Pp. 72.

DR. H. E. LEIGH CANNEY has published two papers which he read before the Royal Meteorological Society of England in December, 1896, and before the Twelfth International Congress of Medicine at Moscow last year.

The title of the work under our consideration is "The Winter Meteorology of Egypt, and its Influence on Disease." Through the kind assistance of several friends at other stations in Egypt provided with similar instruments, and working on the same method at comparable sites, his own observations were undertaken three years ago, so as to arrive at a knowledge of the climate of Egypt generally, and of the Nile Valley especially, during the winter.

By such combined action very valuable observations have been made, which, as the author observes, afford important information to the medical profession.

In our own personal experience of Egypt in all seasons of the year we have remarked the variations of temperature as being very great, even at Alexandria, at Suez, and other localities. What struck us was the great suddenness of the fall of temperature that occurred on a change of wind.

Dr. Canney shows that the variations of temperature in the Desert range from 23° to 160° Fahrenheit. The facts recorded by him and others, and observed by ourselves at all seasons, afford physicians and their patients indications, which should not be forgotten, as to the necessity of providing against the rapid changes of temperature by suitable clothing; indeed, what is not always attainable abroad—comfortable quarters for invalids—are also *desiderata* that should be looked to by the invalid.

The remarkable dryness of the winter in Egypt in most localities is noted by Dr. Canney. In summer, however, the Egyptian climate is by no means so free from moisture.

The author enumerates many diseases which, he states, are benefited by a sojourn in Egypt. He states as unsuitable the following:—Phthisis, with very acute symptoms or tendency to diarrhoea, or repeated pleurisy, or involved larynx, or active disease of both lungs; advanced emphysema, with weak dilated right side of the heart; fatty heart; angina pectoris; hypertrophy and dilatation of the left side of the heart; aortic regurgitation and aneurysm; advanced endocarditis; dysentery or after-dysentery; chronic diarrhoea; tuberculous kidney.

Dr. Canney's work is well worthy of a place in the study of every physician. The few extracts our space allows

us to give will serve to show the practical nature of the work, which we have no hesitation in commending to our readers.

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*A Handbook of Midwifery.* By W. R. DAKIN, M.D. London: Longmans, Green & Co. 1897. 8vo. Pp. 629.

WE welcome the appearance of an English midwifery laying claim to be more than a mere "students' manual"—a term too often employed as a cloak for inefficiency.

The author states that nothing important to his subject has been omitted, and this claim we think he fairly sustains, with the result that one of the largest works of its kind as yet turned out by a London publisher has appeared.

The letterpress is small but clear, and in this way the volume itself is kept within easily manageable limits. The illustrations too, 400 in number, call for a passing remark; these for the most part are diagrammatical, and drawn by the author as he proceeded with his work. They therefore (as might be expected) fall short of the high standard of accuracy met with in works which rely upon the photographic camera and frozen sections to furnish their illustrations. Nevertheless, there is much to be said in favour of these rough sketches, for they often serve to make clear the text in a manner not so easily attained by perusing more complex drawings.

In dealing with the work proper, we are pleased to note short, clear sections on Development and Physiology, which are in every respect sufficient for the first pages of a midwifery hand-book. Anatomy is barely touched on, and this, too, is as it should be, for all such subjects when dealt with in obstetric works cannot be viewed otherwise than as "padding," and are more profitably studied elsewhere.

The author aims at teaching midwifery as he himself practises it, and is no worshipper of authority; we therefore encounter but few references, which, at all events from an unqualified student's point of view, will not be considered a disadvantage.

It is inevitable, however, that such a plan of procedure must cause differences from time to time as regards treatment, &c., to arise between the author and his readers, and the reviewer accordingly finds himself in sharp disagreement with not a few of the views enunciated. For instance, sedatives are advised in slight cases of accidental hæmorrhage; this to be followed by rupture of the membranes should the bleeding become severe. If the cervix is not open sponge-tents are advised; this latter proceeding is said to make the diagnosis clear between this and unavoidable hæmorrhage, and in either case will be the "best possible treatment."

Now why should sedatives be given in slight accidental hæmorrhage?

Evidently the author imagines that the complication is due to uterine contractions, but this is rarely the case, for it is much more often attributable to the rupture of a diseased blood-vessel. Nor is the flow likely to cease until uterine contractions and retractions obliterate their lumen. Then why discourage these processes by the administration of sedatives? Again, we have better modes of procedure than direct dilatation of the cervix; but, should this be considered necessary, why employ a sponge-tent?—a substance incapable of sterilisation, and prone to tear away the delicate cervical epithelium in consequence of its roughened surface.

Nor is this sponge dilatation either a safe or efficient treatment for placenta prævia centralis as advised by the author.

Again, we read that the indications for forceps fall under three heads—(1) uterine inertia; (2) where the head is abnormally large, the pelvis abnormally small, or in a faulty position; (3) where speedy delivery is necessary—as in placenta prævia, prolapse of cord, eclampsia, and delay in delivery of the after-coming head. Now, according to the teaching of the Dublin School Nos. 1 and 2 would be considered absolute contra-indications to instrumental delivery, and in No. 3 the after-coming head would not be accounted as suitable for forceps.

We likewise object to the author's treatment of eclampsia,

consisting as it does of rapid delivery and the administration of chloroform, and maintain that the most reliable statistics are opposed to it.

These and many other sections of the book do not coincide with our views as to proper obstetric practice, but we nevertheless consider the work worthy of much praise and a distinct addition to the science and art of midwifery, always remembering "that more than one road leads to Rome."

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*Medical School Calendar for Scotland, 1897-98.* Edinburgh:  
E. & S. Livingstone, 15 Teviot-place.

FOR students contemplating a trip to Scotland this manual is of the greatest value. In a short, clear, readable statement is told all that the medical student requires to know to enable him to judge of the desirability or otherwise of studying medicine in the Scotch school. Of Irish schools the account given is wholly wrong from beginning to end.

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*Catechism Series : Surgery.* Part V. Edinburgh: E. & S.  
Livingstone.

THE Medical Student dearly loves a small book; it attracts him forcibly, and he is liberally catered for by the publishers. Of this class of booklet is the little work before us, which is modelled on the "Child's Guide," and, like its model, does not convey much information. There are, however, some minds who require easily-digested pabulum; to these the booklet may be of use.

**PART III.**  
**MEDICAL MISCELLANY.**

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*Reports, Transactions, and Scientific Intelligence.*

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**ROYAL ACADEMY OF MEDICINE IN IRELAND.**

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President—EDWARD H. BENNETT, M.D., F.R.C.S.I.  
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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**SECTION OF MEDICINE.**

President—Sir GEORGE F. DUFFEY, M.D., President of the Royal  
College of Physicians of Ireland.  
Sectional Secretary—R. TRAVERS SMITH, M.D.

*Friday, December 17, 1897.*

The PRESIDENT in the Chair.

*A Case of Syphilitic Encephalopathy.*

DR. W. R. DAWSON read notes on a case of this disease. [They will be found at page 108.]

THE PRESIDENT said he wished to ask Dr. Dawson if he had seen many nervous cases attributable to syphilis in the earlier stages of the disease.

DR. DRURY said he would like to ask Dr. Dawson if he considered syphilis to be a very common and constant forerunner of general paralysis.

DR. POLLOCK asked Dr. Dawson if he was able to separate the alcoholic from the syphilitic symptoms. He said that he had met with some cases of exaltation which were entirely due to alcoholism, and one which went on to paralysis and ultimately death.

DR. DAWSON, in reply, said he had not seen any nervous cases which were due to the early stages of syphilis. Such cases were very rare, and two forms of mental states occurred, at all events in secondary syphilis. One was an acute mental form, and seemed



to be due to simple syphilitic meningitis. Recovery generally ensued. The second form was a weak melancholic state of mind, probably due to an anæmic condition. In answer to Dr. Drury, he had not the slightest doubt of the importance of syphilis as an ætiological factor of general paralysis. With regard to Dr. Pollock's question regarding the separation of alcoholic and syphilitic symptoms, there were certain symptoms which it would be impossible to say were alcoholic or syphilitic.

#### *Pernicious Anæmia.*

DR. J. B. COLEMAN read a note on a case of pernicious anæmia, confining himself chiefly to the clinical aspect of the disease as presented by a man, aged sixty-seven, who was admitted to hospital last June, complaining of weakness and shortness of breath. Patient stated that he had been getting pale and weak for two or three months, during which time he had occasional attacks of diarrhœa and vomiting. On admission to hospital he was extremely anæmic, his skin being of a pale yellow or cream colour; temperature  $99^{\circ}$  to  $101^{\circ}$ ; pulse frequent, soft and compressible; he had systolic murmurs over his aortic and pulmonary areas, and a venous hum in the jugular region; he suffered from dyspnœa on exertion. Urine normal in quantity; sp. gr. 1015, dark in colour, acid in reaction, contained neither sugar nor albumen; it gave urobilin spectrum and marked indican reaction; urea 2 per cent.; no trace of iron; ptomains were not examined for. He had subconjunctival ecchymoses, but no retinal hæmorrhages. His blood was pale pink, very watery, did not clot readily; sp. gr. 1034; the fresh specimens showed great variation in the size and shape of the red cells, which had no tendency to rouleaux-formation. Hæmoglobin was reduced to 30 per cent. of normal; the red cells numbered 1,000,000, and subsequently 800,000 per cubic mm. (only 20 to 17 per cent. of normal number); there were only 1,100 white cells per cubic mm., but on the day of his death they amounted to 21,000. Stained blood preparations, which were exhibited, showed poikilocytes, megalocytes (diameter  $14\ \mu$ .), microcytes (diameter  $2-4\ \mu$ .), and nucleated red cells; the latter comprised both giantoblasts (diameter  $14-21\ \mu$ .) and normoblasts; some red cells had lost their hæmoglobin (shadow corpuscles), and others showed polychromatophilic changes. The patient had some hæmorrhage from his gums, and severe attacks of vomiting and diarrhœa, and he died three weeks after admission to hospital. Regarding treatment, arsenic was tried, but had to be discontinued, gastric sedatives, intestinal antiseptics, rectal injections of water,

oxygen inhalations and nutrient enemata were given. The *post-mortem* examination disclosed no lesion to account for the anæmia; his body was fairly well nourished, subcutaneous fat in considerable quantity; lungs very anæmic; heart fatty with atheroma above aortic valves; absence of blood throughout entire vascular system; spleen small, firm, red; kidneys pale, firm, capsule not adherent; liver fatty; stomach and intestines very pale, with atrophy of their walls.

DR. CRAIG said that in cases of pernicious anæmia tremendous stress had been laid on the proportion of organic to normal sulphates in the urine, not only as a means of diagnosis, but also as a guide to treatment. The amount of organic sulphates diminishes if the case is progressing well.

DR. COLEMAN, in reply, said that from a rapid examination he had concluded the aromatic-sulphates to be rather in excess.

PROFESSOR MCWEENEY, DR. FALKNER, and SURGEON-GEN. POTTER all joined in the discussion.

The Section then adjourned.

*Friday, January 28, 1898.*

The PRESIDENT in the Chair.

*Laryngeal Necrosis in Enteric Fever.*

SIR GEORGE DUFFEY made a communication on this disease. [It will be found at page 185.]

DR. W. G. SMITH said, with regard to complications in general occurring after enteric fever, they had to deal with the difficult problem whether to regard them as distinct consequences of the typhoid poison or as comparatively accidental events prepared for by the anatomical lesions of typhoid fever, which opens an ingress to other organisms than its own.

DR. E. H. BENNETT said that he had, a considerable time ago, published the case of a man who was seized with laryngeal perichondritis a fortnight after dismissal from hospital, where he had run through a protracted course of typhoid fever. Immediate tracheotomy was necessary to relieve dyspnoea. There was no supuration. The tube could not be afterwards removed, and the patient wore it for fourteen years, when he died of malignant disease. He had the specimen of a second case, in which there was an abscess in the larynx following typhoid, and in the abscess lay two pieces of necrotic cartilage.

DR. J. MAGEE FINNY related a case where laryngeal complications set in in a patient about nineteen years of age, a strong, healthy Norwegian. The condition being unrelieved by ordinary treatment, tracheotomy had to be performed by Dr. Taylor. Recovery followed. The tube was removed in seventeen days.

DR. HAYES said it was very curious that the records of laryngeal complications from autopsies and clinical records were so different, the number from autopsies being much in excess. This, he thought, showed that the cause of the complication was very slow and insidious. He believed that in those cases of tracheotomy where the tube could not be removed afterwards the reason was that the lesion occurred on the posterior part of larynx, where all movements in the glottis are carried out, and where, if cicatrization should occur, the motion of the arytsenoids would be impeded, and, therefore, stenosis would occur, so that the tube must be retained.

SIR C. NIXON.—If tracheotomy had been performed he thought that the symptoms would have been relieved, and probably the patient's life saved. Von Ziemssen says that laryngeal complications are much lessened by the antipyretic treatment, but he (Sir C. Nixon) had failed to see the truth of this.

MR. HENRY GRAY CHOLY said he had performed tracheotomy on a case under Dr. Parsons, but with very little immediate relief to the patient. Extraordinary emphysema occurred in the neck and chest.

DR. G. JAMIESON JOHNSTON had seen Sir G. Duffey's case in consultation. Respiration at that time was bad, but there was plenty of air entering the chest, and no cyanosis. Muscular exertion was necessary to carry out respiration, which, along with the toxin from typhoid, he thought caused death. He would not hesitate to operate again in a similar case. He thought that the lesion was primarily a perichondritis. Had tracheotomy been performed he believed that the tube would have had to be retained, as the necrotic piece of cartilage would almost certainly ulcerate its way out through the mucous membrane at the back and lead to stenosis.

DR. A. R. PARSONS had not seen any laryngeal complications in typhoid fever till three years ago. A patient of his, twenty-two years of age, had a moderately severe attack of typhoid fever, and in convalescence complained of some difficulty in swallowing. On the following evening temperature was 104, and he had severe dyspnoea, accompanied by well-marked laryngeal stridor. Sweating and cyanosis were present. Tracheotomy was immediately

performed, but with little relief, and very soon emphysema occurred, extending down to Poupart's ligament. Death fourteen hours after operation. *Post-mortem* examination showed extensive œdema of epiglottis, enormous swelling of ary-tænoids and ary-epiglottidean folds, with the formation of ulcers over the mucous surfaces. The ulcers were covered with something like a diphtheritic membrane, but more in the nature of a slough, and no pus was present. Microscopic examination showed this whitish material to be swarming with cocci of various kinds. He had seen Sir G. Duffey's case before the consultation, and owing to the man's prostrate condition a satisfactory examination of the larynx could not be made, as the epiglottis was dependent, and could not be raised. The epiglottis itself was somewhat infected. He did not think that the great physical prostration was to any material extent dependent on the dyspnoea. He did not think that the patient would have lived had tracheotomy been performed. Such cases he thought more likely to be cases of secondary infection by staphylococci and streptococci on account of the impaired vitality of the tissues.

SIR GEORGE DUFFEY, replying, said it seemed to him that there were two classes of cases in which tracheotomy was necessary—one in which the complication occurs comparatively early, and the other class, like Dr. Bennett's patient and Trousseau's cases, in which the complication occurs after convalescence. Trousseau says that if the operation is to be done at all it should be done *plus tôt que plus tard*. Statistics showed that a very fair number of such cases recovered after tracheotomy. The great difficulty was to keep the larynx open after the operation. He thought that this patient's death was due to great muscular exhaustion and fatigue. He agreed with Dr. Parsons that the case was one of perichondritis, and it has been proved that the disease may occur as such without any ulceration whatever.

*Acute Goître Successfully Treated by Thyroid Extract.*

DR. RICHARD A. HAYES read notes of a case on the above subject. (Patient exhibited.)

CASE.—A. S., aged twenty-two, applied at Throat Department, National Eye and Ear Infirmary, 14th Oct., 1897. He presented a soft goître involving both lobes and isthmus, which he stated was of three weeks' duration only. His neck measured  $18\frac{1}{2}$  inches over tumour; pulse, 84, and quiet. A loud systolic bruit and venous murmur were heard over the tumour; there was marked dyspnoea, with loud inspiratory stridor on the least exertion or excitement,

but the arytaenoids moved outwards normally during quiet inspirations, but in a jerky manner. There was no exophthalmos, and the heart sounds were normal.

The patient was ordered K. I. gr. 10, tr. strophanthi m 10, ter die. After a week the tumour was almost unaltered, but the pulse-rate had gone up to 96. Five-grain tabloids of thyroid extract (B. & W.) twice daily were then ordered, and at the end of a week the dyspnoea and stridor had completely disappeared, and the systolic bruit and venous hum could no longer be heard. The tumour had also somewhat decreased in size. The treatment was continued, and on December 16th, or two months after the case was first seen, the goitre had almost quite gone, a slight enlargement of the left lobe alone remaining, the neck measuring 16 inches.

This case probably belonged to the exophthalmic variety of goitre, and on looking over the *British Medical Journal* and *Lancet* for the past eighteen months I find five cases reported as successfully treated by thyroid extract, all being exophthalmic. I have, however, at present under my care a marked case of this kind with extremely rapid pulse and much general prostration, in which not only did the thyroid extract give no relief, but I was obliged to discontinue it on account of unpleasant effects on the patient.

In forms of goitre other than exophthalmic I have found the results of treatment by thyroid extract very unsatisfactory, but several cases have been reported as cured and improved. In the *British Medical Journal*, January, 1897, a case of "simple" goitre of nine months' standing is reported as cured in three months. In the *British Medical Journal*, "Epitome," 21st March, 1896, K. P. Serapin reports good results, but gives no details, and in the *British Medical Journal*, "Epitome," 7th December, 1895, Marie (*Sem. Méd.*, November 13th) reports a successful case of five years' standing. He also quotes Sené and Bruns in "simple" goitre, Bruns having in 60 cases 14 cures, 20 marked improvements, and 9 decided improvements. No details being given of these cases, it is possible that many of them may have been of the exophthalmic variety with goitre only.

SIR C. NIXON said he had seen cases of myxoedema with complete atrophy of the gland treated with thyroid extract with extraordinary results. He understood that the administration of thyroid extract in exophthalmic goitre made the symptoms worse. This was easily understood, as the giving of thyroid extract increased the amount of secretion already in excess. How was it explained that the action of thyroid extract was remediable in two opposite conditions?

SURGEON-GENERAL POTTER said that he had seen many cases of

simple goitre when in India. The goitres, although extremely large, did not cause the slightest trouble to the person. The swelling in the neck generally went away after one application of biniodide of mercury.

DR. A. R. PARSONS said that the case was interesting, inasmuch as the enlargement of the thyroid seemed to have occurred without any definite cause, and in the absence of knowledge was it not possible that the whole thing should have subsided without thyroid extract as rapidly as it had come on.

The PRESIDENT said that perhaps some of the cases to which Sir C. Nixon had referred, and also Surgeon-General Potter's cases, were not similar to Dr. Hayes's. He took it that Surgeon-General Potter's cases were endemic, common in Switzerland and in some parts of England where the so-called Derbyshire neck existed. He saw a number of cases in the north of England similar more or less to the Swiss cases—namely, cretons—which Dr. Murray found were much benefited by thyroid extract.

DRS. CROLY and KNOTT also spoke.

DR. R. A. HAYES, in reply, said that their use of thyroid extract must be, to a certain extent, empirical. It would be a happy thing if they could adopt Sir C. Nixon's simple theory to explain cases of exophthalmic goitre. How would he (Sir C. Nixon) explain those cases frequently met with of exophthalmic goitre with cardiac symptoms excessively marked, and no goitre at all present. He believed that Surgeon-General Potter's cases were of the endemic type, and he could himself bear out that, in certain classes of cases, good results were obtained from the application of biniodide of mercury, with arsenic internally. He was inclined to agree with Dr. Parsons, because he had seen cases of exophthalmic goitre get well of themselves, and rapidly; but in a case like the present, where the patient was suffering from dyspnoea and nervous symptoms, he thought it only right to try and alleviate his trouble in whatever way seemed best.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.

Sectional Secretary—E. J. McWEENEY, M.D.

*Friday, January 14, 1898.*

The PRESIDENT in the Chair.

*Aneurysm of Heart.*

DRS. NORMAN and RAMBAUT demonstrated this specimen, which was discussed by DRS. McWEENEY and CROLY, and DR. NORMAN replied.

*Cirrhotic Liver with Adenomatous Tumour.*

DR. H. T. BEWLEY showed this specimen, which was discussed by DRS. NORMAN, the PRESIDENT, McWEENEY, and CROLY, and DR. BEWLEY replied.

*Dissecting Aneurysm of Aorta.*

A specimen illustrative of this condition was shown by DRS. NORMAN and REDINGTON, and discussed by the PRESIDENT OF THE ACADEMY (Professor Bennett), DRS. CROLY, KNOTT, and the PRESIDENT OF THE SECTION.

*Intra-Ocular Sarcoma.*

MR. A. H. BENSON described two cases, of which the following are abstracts :—

CASE I.—E. M., a girl, aged twenty-two. Extensive detachment of retina. High tension. Total blindness. Enucleation of globe. Diffuse, flat, pigmented tumour from ciliary body to near the equator, almost crescentic on section. Spindle-celled melanoma. No recurrence after 13 months.

CASE II.—K. F., a woman, aged fifty-two. Funnel-shaped detached retina, with intra-ocular hæmorrhages visible. High tension. Vision totally lost. Pain intense. Enucleation. Punduculated pale tumour, about the size of a good pea, growing near optic nerve. No recurrence after a year and ten months. The tumour was a leuco-sarcoma, entirely devoid of pigmentation.

MR. CROLY wished to know was it in the brain or in the other eye

that recurrence took place after removal of the contents of the orbit for sarcomatous tumour. Sarcomatous tumours were not likely to recur in their original positions, and sarcomatous tumours spread through the blood-vessels, not the lymphatics. It was his experience to find sarcomatous tumours in the young, and he had seen sarcoma of the tonsil at seventeen years of age.

MR. BENSON, replying, said that in talking of recurrence he alluded to local recurrence. Of course in eye cases general recurrence occurred also, and that came into Fuchs's fourth stage generalisation. Intra-ocular sarcomata recurred in young people, but very much more commonly in older people. If, in removing the eye, the optic nerve was found implicated, as much of the latter as possible was also removed; but extirpation of the orbit was an impossible thing to do completely, and some of the diseased tissue was liable to get introduced into some of the crevices in the neighbourhood.

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## SECTION OF SURGERY.

President—SIR WILLIAM THOMSON, President of the Royal College of Surgeons.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

*Friday, January 21, 1898.*

The PRESIDENT in the Chair.

*A Case of Successful Ligation of Left Subclavian Artery in its second stage.*

MR. HENRY GRAY CROLY detailed the history of a case of traumatic aneurysm which involved the third stage of the left subclavian, and the third stage of the axillary arteries. Mr. Croly ligatured the subclavian in its second stage. The patient, who was exhibited to the Society in January, 1897, and again on this date, a year after operation, is in perfect health, and can use his left arm as well as his right. He is at work daily as a garden labourer.

*History.*—He was stabbed by a man, in a public-house, with a tailor's scissors. The first stab was inflicted immediately below the clavicle, the second above the clavicle; very severe arterial



hæmorrhage followed. The man's arm dropped dead at his side, he became collapsed, and was removed at once by the police to the hospital. On admission the hæmorrhage was merely oozing; there was a huge hæmatoma beneath the clavicle, and the man was in a very weak state. No radial pulse could be felt; a *bruit* was heard over the tumour. Restorative treatment was adopted; pressure applied; under treatment, which included perfect rest, the tumour gradually diminished, and the pulsation became less forcible. In Nov., 1893 (six months after the injuries were inflicted), the patient left hospital for the Convalescent Home at Stillorgan, and shortly returned home and resumed his work. A large aneurysmal tumour soon formed, and the man was re-admitted to the hospital, February 15th, 1895. (The cast exhibited shows the extent of the tumour at that time.) The patient was placed under treatment again, and perfect rest was enjoined.

December 2nd, 1895, Mr. Croly, assisted by his colleagues, ligated the subclavian artery in its second stage. An incision, about two inches in length, was made along the outer border of the sterno-mastoid; a second incision extended above the clavicle from the sterno-clavicular articulation to the acromion process, the sternal and clavicular origins of the sterno-mastoid muscle were divided, the aneurysmal tumour was found to occupy the entire third stage of the subclavian, the omohyoid muscle was pushed up, the dissection was continued, and the external border of the scalenus anticus muscle was found with its external border directed backwards. The phrenic nerve came into view in its normal position, and on its exposure the patient hiccupped twice. The outer half of the scalenus anticus muscle was divided with a scissors rounded on its points. The artery which lay in the bottom of a very deep wound and covered by a strong fascia was exposed and pulsated, and portion of its sheath carefully divided. At this stage of the operation the pleura, like the finger of a white glove, hopped up, but gave no further trouble. With the left hand a deeply curved aneurysm needle was passed under the artery from below, and then armed with a *double* ligature of gold-beater's skin. The ligature next the heart was first tightened with a "reef-knot;" the pulsation in the aneurysm ceased immediately, and the radial pulse could not be felt. The second ligature was then tightened, and the four ends were next secured across the vessel by means of the "stay knot." The ends of the ligature were cut off, and the wound closed. Every step of the operation was carried out strictly in accordance with aseptic rules. The incisions were closed by means of gut sutures, and the arm and shoulder

enveloped in cotton wool and flannel bandages. The patient made an uninterrupted recovery, and was exhibited to the members at the Surgical Section of the Academy in January, 1896. His arm, forearm, and hand are now normal; he works and lifts weights.

The PRESIDENT remarked that the actual mode of applying the ligature was important, the walls of the vessels not being injured, but only approximated, allowing the irritation to produce entire occlusion and adhesion of the walls.

SIR WILLIAM STOKES said that the best congratulations were due to Mr. Croly. The result showed that a clot formed at the situation of the ligature—a thing which some authorities say is impossible. In the operation it was of great importance not to wound the phrenic nerve. He asked Mr. Croly if it were necessary in cases like his to divide any portion of the scalenus anticus muscle in order to take out the vessel in its second stage. He (Sir W. Stokes) had performed the operation several times on the dead body, and found that by drawing to the inside the scalenus anticus, and without any division of the muscular tissue, he could get at the second stage very well, and thought that by this means the phrenic nerve could be avoided. He thought that Mr. Croly's method of passing the aneurysm needle from below upwards and outwards was the best, as, by so doing, the subclavian vein ran least risk of being injured. Some text-books say that the needle should be passed in the opposite direction—from without inwards—in order to avoid including the last cord of the brachial plexus; but he considered the subclavian vein a much more important structure, and that the nerve could be avoided.

MR. T. E. GORDON considered that the method of applying the ligature was among the most important factors which gave the brilliant result. He thought that it made little difference what the ligature was made of provided it was perfectly sterile; silk was excluded. He had been practically satisfied with the use of catgut boiled in superheated alcohol, a method which did not render the catgut brittle. He had found kangaroo tendon very brittle. He would like to ask Mr. Croly in what way the wounding of the pleura was of such special danger. He was inclined to think that a large number of the fatal cases that have occurred from wounding the pleura were due to want of aseptic precaution.

The SECRETARY also spoke.

MR. M'CAUSLAND asked if the scalenus muscle were drawn aside, and if the phrenic nerve were in the position already referred to, would any result follow the traction on the nerve?

DR. KNOTT made a few remarks.

MR. CROLY, in reply, said he had always been keen on approximating the coats of an artery by Scarpa's method. There was no case on record of secondary hæmorrhage from any artery in its continuity where Scarpa's method had been adopted. With regard to Sir William Stokes's remarks, he could only say that to have exposed the second stage of the artery without cutting the muscle would have been an utter impossibility. The scalenus anticus could be drawn over in the dead subject. He always attempted to pass the aneurysm needle unarmed. He agreed with Mr. Gordon in his remarks about the ligature.

### *Litholapaxy.*

SURGEON-MAJOR BAKER brought forward a report on a series of 404 operations performed by him when acting as civil surgeon in Hyderabad during the period from 1st February, 1896, to 21st January, 1897, together with fourteen lithotomies performed for various reasons during the same time, and exhibited the calculi removed during these operations. The paper, which was one of exceptional interest, will be published in full in the Transactions.

The PRESIDENT said that they might congratulate themselves on the fact that the work in this particular operation of stone done in India had been mainly done by Irishmen.

MR. CROLY said that the cause of stone was not known. It had been attributed in Scotland to the porridge. Alluding to recurrence he said that he had taken two stones out of a man's bladder, and took two more in another couple of years from the same man. He had operated on a good many children for stone, and had found that he could get a No. 7 staff into the bladder without any dilatation of the urethra. There were in the museum stones which he thought Surgeon-Major Baker would not be able to crush owing to their hardness. Some books denied that a stone got attached to the coat of the bladder, but he had once to scoop out a stone which was adherent on all sides of the bladder. He asked why the crushing was complicated with the cutting operation. If a cutting operation was going to be done, why not cut out the stone and drain the bladder? Draining of the bladder was now considered a most important point.

BRIGADE-SURGEON-LIEUTENANT-COLONEL POTTER said that he had been a stone-cutter and not a stone-crusher. When in India he had seen four operations for stone in one morning, but never more. He considered litholapaxy to be infinitely superior to lithotomy. He thought that the water of the country had a good

deal to do with the frequency of stone, and possibly heredity might also have something to do with it.

**SURGEON-MAJOR BAKER**, replying, said that to Keegan was due the credit of having proved, against a good deal of prejudice, that crushing of stone in children could be carried out satisfactorily. Mr. Freyer had precisely the same proportion of recoveries in his work in London, including adults and children, as he had in India. Weiss's instrument for children was No. 5 in the shank and No. 7 in the bend. His difficulty on hearing of Mr. Keith's operation first had been exactly the same as Mr. Croly's, and he had thought that crushing combined with cutting was wrong. First of all a grooved staff is passed, the urethra opened with a tenotome, a grooved director passed in, then a small female sound, and, finally, a large one, and a small lithotrite is then easily passed into the bladder. He did not believe that the wound existed for more than an hour after the operation. A single drop of urine never came away afterwards, a fact which he could not explain. Keith gave as an explanation that the opening was valvular. The operation was entirely different from perineal lithotomy, which consisted in making a large wound in the perineum and introducing something like a pair of calipers. He had no doubt that Mr. Croly had met with stones which would defy any lithotrite. He was sure that stones sometimes became adherent to the bladder.

The Section then adjourned.

#### ARMY MEDICAL STAFF.

THE following is the official list of successful candidates for commissions in the Army Medical Staff at the examination held in London in February, 1898:—

Order of Merit	Names	Marks	Order of Merit	Names	Marks
1.	Nickerson, W. H. S.	2,775	12.	Dobbin, E. J.	2,154
2.	Walker, A. E.	2,693	13.	O'Flahertie, A. R.	2,148
3.	Nickerson, G. S.	2,617	14.	Herrick, H.	2,127
4.	Weld, A. E.	2,504	15.	Mainprise, C. W.	2,103
5.	Gallie, J. S.	2,474	16.	Archer, G. J. S.	2,069
6.	Crisp, G. B.	2,439	17.	Fuhr, R. J. H.	2,066
7.	Walton, H. B. G.	2,324	18.	Hall, J. O.	2,058
8.	Jagger, W.	2,323	19.	Heffernan, F. J. C.	1,994
9.	MacCarthy, A. B.	2,275	20.	Cowan, J.	1,965
10.	Selby, R.	2,196	21.	Hewitt, E. P.	1,943
11.	Thorp, A. E.	2,163			

## SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.;  
F.R.C.P.I.; F. R. Met. Soc.;  
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

### VITAL STATISTICS

*For four weeks ending Saturday, January 29, 1898.*

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Jan. 8	Jan. 15	Jan. 22	Jan. 29		Jan. 8	Jan. 15	Jan. 22	Jan. 29
Armagh -	28.5	14.8	21.4	14.8	Lisburn -	21.8	29.8	4.8	21.3
Ballymena	28.2	33.8	50.7	11.8	Londonderry	25.1	26.7	26.7	31.4
Belfast -	24.5	28.6	25.2	24.8	Lurgan -	41.1	4.6	18.7	9.1
Carrickfergus	35.1	29.2	35.1	17.5	Newry -	36.2	28.2	16.1	8.1
Clohamel -	19.5	29.2	48.7	24.8	Newtownards	22.7	22.7	34.0	5.7
Cork -	26.8	21.5	18.0	22.1	Portadown	24.7	43.8	37.1	48.8
Drogheda -	30.4	8.8	0.0	15.2	Queenstown	11.5	17.2	23.0	28.0
Dublin -	29.7	31.2	31.3	28.2	Sligo -	25.4	30.5	15.2	30.5
Dundalk -	16.8	0.0	37.7	8.4	Tralee -	22.4	22.4	11.2	28.0
Galway -	11.8	34.0	7.6	30.2	Waterford	15.9	23.9	6.0	29.8
Kilkenny -	9.4	4.7	28.6	23.6	Wexford -	13.5	9.0	22.6	40.6
Limerick -	18.2	22.5	21.1	28.1					

In the week ending Saturday January 8, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 23.0), was equal to an average annual death-rate of 21.4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24.3 per 1,000. In Glasgow the rate was also 24.3. In Edinburgh it was 25.0.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 25·8 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in eleven of the districts to 10·2 in Sligo—the 5 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 143 deaths from all causes registered in Belfast are 1 from measles, 2 from whooping-cough, 1 from diphtheria, 6 from enteric fever, and 3 from diarrhoea. The 16 deaths in Londonderry comprise 4 from whooping-cough.

In the Dublin Registration District the registered births amounted to 235—110 boys and 125 girls; and the registered deaths to 208—88 males and 120 females.

The deaths, which are 12 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·0 in every 1,000 of the population, being 1·7 under the mean rate for the first week of the ten years 1888–1897. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the district, the rate was 29·7 per 1,000.

Twenty-nine deaths from zymotic diseases were registered, being 4 over the average for the corresponding week of the last ten years, and 9 over the number for the previous week. They comprise 5 from scarlet fever (*scarlatina*), 5 from influenza and its complications, 4 from whooping-cough, 6 from enteric fever, and 3 from diarrhoea.

The weekly number of cases of *scarlatina* admitted to hospital, which had risen from 25 in the week ended December 18 to 30 in the following week, and 37 in the week ended January 1, further rose to 43. Thirty-four *scarlatina* patients were discharged, 3 died, and 185 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week. This number does not include 31 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of cases of enteric fever admitted to hospital was 18, being 4 under the admissions in the preceding week. Twenty-three patients were discharged, 2 died, and 128 remained under treatment on Saturday, being 7 under the number in hospital on that day week.

The hospital admissions for the week included, also, 3 cases of

typhus. Five cases of this disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 51, being 9 under the average for the corresponding week of the last ten years, and 3 under the number for the previous week. The 51 deaths comprise 31 from bronchitis and 17 from pneumonia.

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In the week ended Saturday, January 15, the mortality in thirty-three large English towns, including London (in which the rate was 22·9), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·4 per 1,000. In Glasgow the rate was 21·2, and in Edinburgh it was 19·3.

The average annual death-rate in the twenty-three principal town districts of Ireland was 25·6 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in fifteen of the districts to 7·6 in Galway—the 9 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from simple continued fever. Among the 138 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 1 from whooping-cough, 10 from enteric fever, and 1 from diarrhoea. The 17 deaths in Londonderry comprise 1 from whooping-cough and 1 from diarrhoea.

In the Dublin Registration District, the registered births amounted to 202—90 boys and 112 girls; and the registered deaths to 213—91 males and 122 females.

The deaths, which are 31 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·8 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 31·2 per 1,000. During the first two weeks of the current year the death-rate averaged 31·4, but was 3·1 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 22, being 9 below the average for the corresponding week of the last ten years, and 7 under the number for the previous week. The 22 deaths comprise 3 from scarlet fever (scarlatina), 9 from influenza and its complications, 2 from whooping-cough, 4 from diphtheria, 2 from enteric fever, and one from diarrhoea.

The weekly number of cases of scarlatina admitted to hospital fell to 37. Thirty-three scarlet fever patients were discharged; one died, and 188 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week. This number is exclusive of 21 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 16, being 2 under the admissions in the preceding week and 6 under the number in the week ended January 1. Twenty patients were discharged, 3 died, and 121 remained under treatment on Saturday, being 7 under the number in hospital on that day week.

Four cases of typhus were received. Two patients were discharged, and 7 remained under treatment on Saturday.

The number of deaths from diseases of the respiratory system registered is 54, being 17 under the average for the second week of the last ten years. The 54 deaths comprise 28 from bronchitis and 24 from pneumonia.

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In the week ending Saturday, January 22, the mortality in thirty-three large English towns, including London (in which the rate was 23·4), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 18·4, and in Edinburgh it was 16·0.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 25·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in fourteen of the districts to 9·4 in Londonderry—the 17 deaths from all causes registered in that district comprising 6 from whooping-cough. Among the 147 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 1 from whooping-cough, 1 from diphtheria, 10 from enteric fever, and 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 171—95 boys and 76 girls; and the registered deaths to 221—110 males and 111 females.

The deaths, which are 30 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 33·0 in every 1,000 of the population. Omitting the deaths (numbering 11) of persons admitted into public insti-



tutions from localities outside the district, the rate was 31·3 per 1,000. During the first three weeks of the current year the death-rate averaged 31·9, and was 3·5 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 31, being 9 over the number for the preceding week, but one below the average for the corresponding week of the last ten years. The 31 deaths consist of 2 from scarlet fever (scarlatina), 9 from influenza and its complications, 2 from whooping-cough, 6 from diphtheria, 1 from ill-defined fever, 7 from enteric fever, 2 from diarrhoea, 1 from dysentery, and 1 from erysipelas.

The number of cases of scarlatina admitted to hospital was 30, being 7 under the admissions in the preceding week. Twenty-five scarlatina patients were discharged, 3 died, and 190 remained under treatment on Saturday, being 2 over the number in hospital on that day week. There were also 25 convalescents from scarlatina at Beneavin, Glasnevin.

Nineteen cases of enteric fever were admitted to hospital. Twenty-one patients were discharged, 3 died and 116 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had risen from 51 in the week ended January 8, to 54 in the following week, fell to 36, or 39 under the average for the corresponding week of the last ten years. The 36 deaths consist of 25 from bronchitis and 11 from pneumonia.

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In the week ending Saturday, January 29, the mortality in thirty-three large English towns, including London (in which the rate was 20·4), was equal to an average annual death-rate of 18·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·4 per 1,000. In Glasgow the rate was 18·0, and in Edinburgh it was 15·8.

The average annual death-rate in the twenty-three principal town districts of Ireland was 25·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in seventeen of the districts to 6·2 in Portadown—the 7 deaths from all causes registered in that district comprising 1 from enteric fever. Among the 142 deaths from all causes registered in Belfast are 1 from measles, 1 from whooping-cough, 1 from diphtheria, 11 from enteric fever, and 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 240—124 boys and 116 girls; and the registered deaths to 194—83 males and 111 females.

The deaths, which are 39 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·9 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 28·2 per 1,000. During the first four weeks of the current year the death-rate averaged 31·2, and was 4·0 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 29, being 2 under the average for the corresponding week of the last ten years, and also 2 under the number for the previous week. The 29 deaths consist of 3 from scarlet fever (scarlatina), 10 from influenza and its complications, 4 from whooping-cough, 1 from diphtheria, 2 from simple continued and ill-defined fever, 6 from enteric fever, 1 from diarrhoea, and 2 from erysipelas.

Thirty cases of scarlatina were admitted to hospital. This number shows a decline of 7, as compared with the admissions in the week ended January 15. Thirty-seven scarlatina patients were discharged, 3 died, and 180 remained under treatment on Saturday, being 10 under the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Beneavin, Glasnevin.

Twenty-six cases of enteric fever were admitted to hospital. Twelve patients were discharged, 2 died, and 128 remained under treatment on Saturday, being 12 over the number in hospital on the preceding Saturday.

The number of deaths from diseases of the respiratory system registered is 43, being 7 over the number for the preceding week, but 22 under the average for the fourth week of the last ten years. The 43 deaths comprise 26 from bronchitis and 15 from pneumonia.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.  $53^{\circ} 20'$  N., Long.  $6^{\circ} 15'$  W., for the Month of January, 1898.*

Mean Height of Barometer, -	-	-	30.202 inches.
Maximal Height of Barometer (on 23rd, 9 a.m.),			30.589 „
Minimal Height of Barometer (on 1st, 9 a.m.),			29.334 „
Mean Dry-bulb Temperature,	-	-	$47.4^{\circ}$
Mean Wet-bulb Temperature,	-	-	$45.2^{\circ}$ .
Mean Dew-point Temperature,	-	-	$42.8^{\circ}$ .
Mean Elastic Force (Tension) of Aqueous Vapour,			.276 inch.
Mean Humidity, -	-	-	85.1 per cent.
Highest Temperature in Shade (on 30th),	-		$60.8^{\circ}$ .
Lowest Temperature in Shade (on 1st),	-		$31.9^{\circ}$ .
Lowest Temperature on Grass (Radiation) (on 1st),	-	-	$30.0^{\circ}$ .
Mean Amount of Cloud,	-	-	65.8 per cent.
Rainfall (on 14 days),	-	-	1.786 inches.
Greatest Daily Rainfall (on 2nd),	-	-	.498 inch.
General Directions of Wind,	-	-	S. W., W., S.

*Remarks.*

January, 1898, establishes a record for high temperature—the mean was above the average all over North-western and Western Europe, including France and Northern Germany. In Dublin it was  $47.8^{\circ}$ , or  $1.2^{\circ}$  above the value for the warm January of 1875. An anticyclone over Central Europe, with depressions over the Norwegian Sea and Northern Europe, caused S.W. winds off the Atlantic and the high temperature of the month. There was at the same time a deficient rainfall, which is unusual.

In Dublin the arithmetical mean temperature ( $47.8^{\circ}$ ) was much above the average ( $41.4^{\circ}$ ); the mean dry bulb readings at 9 a.m. and 9 p.m. were  $47.4^{\circ}$ —a record warmth for January. In the thirty-three years ending with 1897, January was coldest in 1881 (M.T. =  $33.2^{\circ}$ ), and warmest in 1875 (M. T. =  $46.6^{\circ}$ ). In 1897, the M. T. was  $38.1^{\circ}$ . As a general rule, January in Dublin is not colder, but a shade warmer, than December. This is owing to the full development in January of a winter area of low pressure over the Atlantic, to the north-westward of the British Isles, and to a resulting prevalence of S.W. winds in their vicinity. January, 1898, proved no exception to this rule, the M. T. being  $2.9^{\circ}$  above that of December, 1897 ( $44.9^{\circ}$ ).

The mean height of the barometer was 30.202 inches, or 0.328 inch above the corrected average value for January—namely,

29.874 inches. The mercury rose to 30.589 inches at 9 a.m. of the 23rd, and fell to 29.334 inches at 9 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, 1.255 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was  $47.4^{\circ}$ , or  $10.1^{\circ}$  above the value for January, 1897. Using the formula, *Mean Temp.* = *Min.* + (*max.* - *min.*  $\times .52$ ), the M.T. becomes  $47.9^{\circ}$ , compared with a twenty-five years' average of  $41.5^{\circ}$ . The arithmetical mean of the maximal and minimal readings was  $47.8^{\circ}$ , compared with a twenty-five years' average of  $41.4^{\circ}$ . On the 30th the thermometer in the screen rose to  $60.8^{\circ}$ —wind, S.W.; on the 1st the temperature fell to  $31.9^{\circ}$ —wind, W. The minimum on the grass was  $30.0^{\circ}$ , also on the 1st.

The rainfall was 1.786 inches, distributed over 14 days. The average rainfall for January in the twenty-five years, 1865–89, inclusive, was 2.200 inches, and the average number of rainy days was 17.3. The rainfall, therefore, and also the rainy days were below the average. The record rainfall for January was in 1895—namely, 5.711 inches on 24 days. In 1876, only .406 inch was measured on but 9 days; and in 1880 the rainfall was only .563 inch on but 8 days. In 1897, 2.694 inches fell on 17 days.

The atmosphere was foggy on the 1st, 2nd, 3rd, 5th, 13th, 14th, 15th, and 20th. High winds were noted on 8 days, reaching the force of a gale on 4 days—the 18th, 19th, 29th, and 30th. There was no snow, sleet, or hail. Temperature exceeded  $50^{\circ}$  in the screen on 21 days; while it fell to or below  $32^{\circ}$  in the screen on only one night, compared with 13 nights in 1897, only 3 in 1896, 18 in 1895, 7 in 1894, 4 in 1893, 15 in 1892, 7 in 1891, 1 night in 1890, and 3 nights in 1889. The minima on the grass were  $32^{\circ}$  or less on only 3 nights, compared with 21 nights in 1897, 8 nights in 1896, 29 in 1895, 17 in 1894, 16 in 1893, 25 in 1892, 21 in 1891, 15 in 1890, and 16 in 1889. Solar halos were seen on the 1st and 2nd; lunar halos on the 1st, 3rd, 9th, and 31st.

New Year's Day, 1898, broke calm, foggy, and frosty. A solar halo was seen at 1 p.m. Dense, wet fog formed at 4 p.m. During the week ended Saturday, the 8th, there was a spell of open, but rainy and generally changeable, weather. The prevalent trend of the atmospheric currents across North-western Europe was from S.W. to N.W., but no very large or deep depressions were observed, and so there were no gales of any magnitude. Even on the Continent there was but little frost, and what did occur was intermittent only. In the South of Russia and in Hungary, however, freezing weather of some intensity was reported within the limits of an anticyclone which had held its position over those regions with considerable

steadiness since December 27. On Sunday a shallow depression off the S. of Ireland caused a heavy rainfall in this country and in Wales. On Monday evening a dense wet fog hung over Dublin for a time. A red sunrise on Tuesday morning ushered in a new depression, which brought a still heavier downpour to the Irish and Welsh stations. By Wednesday morning the area of precipitation had extended to England. A brief spell of finer and very warm weather was followed by a renewed rainfall on Thursday afternoon. Friday was at first brilliant, then cloudy. A partial eclipse of the moon was seen at night. Saturday proved changeable with rain in the afternoon and evening. In Dublin the mean height of the barometer was 29·892 inches, pressure ranging between 29·620 inches at 9 a.m. of Sunday (wind, E.), and 30·167 inches on Monday afternoon (wind, calm). The corrected mean temperature was 46·4°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 45·7°. On Wednesday and again on Thursday the sheltered thermometers rose to 54·7°, having fallen to 37·9° on Sunday. The rainfall was 1·107 inches on six days, ·498 inch being measured on Sunday. South-westerly winds prevailed.

The weather remained very mild during the week ended Saturday, the 15th, the remarkable point being that both the barometer and the thermometer ranged high. Also it is unusual for fine weather and high temperatures to go hand and hand in winter. The period was rainless at many stations in Great Britain and in the East of Ireland. On Sunday morning cyclonic systems of no great depth were found off the North of Scotland and the North of Spain, while anticyclonic systems existed to the westward of Ireland and over the Baltic and Germany. Fine, quiet weather prevailed. Throughout the remainder of the week a large anticyclone stretched east and west across Central Europe, while depressions passed north-eastwards or eastwards across the extreme North of Europe. At first the British Islands lay well to the north of the centre of highest pressure, and so fresh S.W. to W. winds blew generally. On Friday the home countries came more under the influence of the anticyclonic calm area, so that the weather improved, becoming cooler and finer. Saturday was a pleasant, sunny day. In Dublin the mean height of the barometer was 30·356 inches, pressure ranging from 29·980 inches at 9 a.m. of Sunday (wind, W.S.W.) to 30·554 inches at 9 p.m. of Saturday (wind, S.S.W.). The corrected mean temperature was 46·0°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 45·6°. On Wednesday the screened thermometers rose to 53·6°, on Monday they fell to 36·9°. A very perfect lunar halo appeared on Sunday evening. The prevalent wind was again S.W. There was no rainfall in or near Dublin.

The open weather so characteristic of the present winter held throughout the week ended Saturday, the 22nd. Fine at the beginning and close, it was rainy and stormy during the middle of the period; but temperature was persistently above average, sometimes remarkably so. All through the week an anticyclone, in which the barometer stood as high as 30·60 inches, lay over Central Europe, where calm, foggy, and very cold weather prevailed. Thus at Munich the 8 a.m. thermometer readings were 23°, 18°, 18°, 15°, 16°, 18°, and 33° respectively. Meanwhile the barometer was low over the Norwegian Sea and Lapland—in the latter country it fell below 28·80 inches on Wednesday (to 28·76 inches at 8 a.m. at Haparanda). Strong S.W. to W. winds or gales swept over the British Isles and Scandinavia on this day, accompanied by only moderate rainfalls but by strangely high temperature. At Wick the thermometer rose to 60° in the shade, 3° above any maximal shade temperature recorded at that station in January since 1871, the previous highest reading being 57° in January, 1889. By 6 p.m. the thermometer had fallen 21° at Wick—namely to 39°. On Saturday morning a small depression passed eastward across Scotland and in its rear a brisk fall of temperature took place, extending to Ireland and England later in the day. In Dublin the mean height of the barometer was 30·265 inches, pressure falling from 30·475 inches at 9 a.m. of Sunday (wind S.E.), to 30·001 inches at 9 a.m. of Wednesday (wind, W.S.W.), and rising again to a maximum of 30·564 inches at 9 p.m. of Saturday (wind, N.E.). The corrected mean temperature was 50·6°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 50·1°. On Sunday the screened thermometers fell to 36·8°, on Wednesday they rose to 57·7°. The rainfall was ·338 inch on four days, ·180 inch being measured on Wednesday. The prevailing wind was S.W.

Another week—ended Saturday, the 29th—of singularly mild, fine weather has to be recorded. In Dublin the corrected mean temperatures of the past four weeks have been 46·4°, 46·0°, 50·6°, and 48·8°—all of which values are far above the average for January. As in previous weeks the distribution of atmospheric pressure has been anticyclonic (high and steady) over the southern half of the British Islands and Central Europe, cyclonic (low and unstable) in Northern Europe and to a less extent in the Mediterranean Basin also. Ireland lay constantly in the track of the S.W. winds of the N.W. quadrant of the anticyclone, and so the weather was throughout mild in this country. On Sunday morning, and to a less extent on Friday and Saturday, comparatively low temperatures occurred in England—in fact frost was registered on Sunday

morning, when the thermometer fell to  $29^{\circ}$  at York and Loughborough and to  $30^{\circ}$  at Cambridge. At this last station a minimum of  $28^{\circ}$  was recorded on Saturday. On Wednesday and Thursday a vast and deep depression passed eastwards across Lapland—at 8 a.m. of Thursday the barometer was down to 28.50 inches at Haparanda, on the Gulf of Bothnia, whereas it stood 2 inches higher (30.50 inches) at Lyons. At the time mentioned the thermometer read  $31^{\circ}$  at Haparanda but only  $-6^{\circ}$  at Hermanstadt in Transylvania, 20 degrees of latitude further south. On Saturday a new depression in the far N.W. and N. caused the wind to freshen to a gale from S.W. in Ireland, with a moderate rainfall. In Dublin the mean height of the barometer was 30.419 inches, pressure varying from 30.589 inches at 9 a.m. of Sunday (wind, S.), to 30.239 inches at 9 p.m. of Saturday (wind, W.S.W.). The corrected mean temperature was  $48.8^{\circ}$ . The mean dry bulb reading at 9 a.m. and 9 p.m. was  $48.3^{\circ}$ . On Friday the screened thermometers fell to  $40.8^{\circ}$ , on Saturday they rose to  $56.0^{\circ}$ . Rain fell on Saturday to the amount of .034 inch only. S.W. winds again predominated.

The mild weather of the month culminated on Sunday, the 30th, the mean temperature of which was  $56.9^{\circ}$ , while the extremes were—highest,  $60.8^{\circ}$ ; lowest,  $52.9^{\circ}$ . The 31st was changeable—at first fair and colder, then milder, squally, and rainy.

In Dublin the rainfall up to January 31st, 1898, amounted to 1.786 inches on 14 days, compared with 2.694 inches on 17 days in 1897, only .720 inch on 14 days in 1896, and with a twenty-five years' average (1865–1889) of 2.200 inches on 17.3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 2.345 inches on 13 days, compared with 3.660 inches on 20 days in 1897, only .485 inch on 7 days in 1896, and 6.190 inches on 19 days in 1895. The heaviest falls in 24 hours were 1.030 inches on the 2nd, and .530 inch on the 1st.

At Cloneevin, Killiney, Co. Dublin, the rainfall was 1.580 inches on 13 days, .620 inch being measured on the 2nd. The average fall in January for the 12 years, 1885–1896, was 2.235 inches on 16.5 days. In 1894, the rainfall was 3.260 inches on 23 days, in 1895, 5.930 inches on 24 days, in 1896, .700 inch on 9 days, and in 1897, 3.080 inches on 20 days.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell on 9 days in January, the total measurement being 2.316 inches. On the 2nd 1.001 inches were registered; on the 1st, .486 inch, and on the 4th, .368 inch. At this climatological station the thermometer in the screen did not sink to  $32^{\circ}$  on any night. The highest temperature in the shade was  $58.8^{\circ}$  on the 30th; the lowest was  $34.0^{\circ}$  on the 10th.



Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1897.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
January	° 51.3	3rd	° 25.0	17th	° 42.2	° 34.0	" 2.694	17	" 29.918	" 30.434	1st	" 29.284	30th	W.N.W., E.S.E.
February	- 59.7	19th	35.0	1st	50.3	41.6	1.395	16	30.001	30.569	22nd	29.209	1st	W., S.W., S.E.
March	- 61.6	21st	29.0	30th	50.7	39.8	2.980	24	29.543	30.081	7th	28.771	2nd	S.S.W., S.W., W.
April	- 59.7	28th	29.9	2nd	51.5	40.8	2.485	22	29.818	30.289	10th	29.281	1st	E., W.S.W.
May	- 63.6	16th	36.2	6th	57.7	44.1	1.139	14	29.976	30.456	16th	29.217	28th	N.W., N.E.
June	- 73.7	22nd	43.0	19th	64.8	52.5	3.257	20	29.999	30.223	3rd	29.348	18th	E., N.W.
July	- 75.1	23rd	46.1	11th	67.5	54.6	1.650	12	30.003	30.361	11th	29.601	20th	W., E., N.W.
August	- 76.8	4th	49.2	19th	66.8	54.7	3.788	24	29.709	30.205	2nd	29.246	21st	S., S.W., W.
September	- 67.7	23rd	40.9	18th	60.5	48.4	2.583	16	29.990	30.578	18th	29.177	1st	N.W., W., S.W.
October	- 62.9	17th	36.1	12th	57.5	47.1	2.110	14	30.096	30.561	21st	29.074	16th	E., S.E., W.
November	- 60.9	12th	34.0	15th	53.1	44.0	3.422	14	30.127	30.654	20th	29.311	28th	W.S.W., S.E.
December	- 57.8	27th	32.9	3rd	49.8	40.0	1.841	18	29.751	30.555	21st	28.740	29th	S.W., S., W.
Extremes, Totals, and Means	° 76.8	Aug. 4th	° 25.0	Jan. 17th	° 56.0	° 45.1	" 29.344	Days 211	" 29.911	" 30.654	Nov. 20th	" 28.740	Dec. 29	W., N.W., S.W.
					50.6°									

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dublin; F.R.C.P.I.;

F. R. Met. Soc.



## PERISCOPE.

### "MEIOTICS OR MYOTICS?"

UNDER this heading we find the following very interesting paragraph in the *New York Medical Journal*, for February 5, 1898:—

"In the January number of the *Dublin Journal of Medical Science*, in a review of an American book on therapeutics, the writer asks for the authority for the spelling 'meiotics' in lieu of the ordinary form, 'myotics.' 'Is not myotic,' he asks, 'the adjectival form of myosis, and is not this derived from *μύω*, to shut the eyes (*μύωψ*, short-sighted), rather than from *μείον*, less?' We think not. Liddell and Scott give *μείωσις*, (from *μειόω*) as meaning diminution, the opposite of *αύξησις*, and cite Hippocrates among other authorities. They give also the adjective *μειωτικός* as meaning lowering, diminishing. They do not give *μύωσις* or *μυωτικός* at all, but they do give *μυωπός* as the equivalent of *μύωψ*, short-sighted. Now, we take it that meiotics have nothing to do with short-sightedness or with closing the lids (which latter is the primary meaning of *μύωψ*); their action is to cause *diminution* (*μείωσις*) of the size of the pupil."

There is no doubt that our American critics are etymologically correct. A competent classical authority informs us that the verbal substantive from *μύω* would be *μύσις*, and the corresponding verbal adjective *μυτικός*. Not only are such forms as *μύωσις* and *μυωτικός* not given by Liddell and Scott, but they could not exist. From this point of view *myotic* and *myosis* rest on a false analogy; *mytic* and *mysis* would be the only possible English formations from *μύω*. Classically, therefore, we must admit that we are beaten. Custom, however, will make it difficult to substitute "meiosis" (or "miosis") and "meiotics" (or "miotics") for the more familiar "myosis" and "myotics."

English and French authorities, both in dictionaries and in works, are all in favour of "myosis" and "myotics" from *μύω*. For example, in Quain's Dictionary of Medicine, in the article on "Disorders of the Pupil" we read, "Myosis (*μύω*, I close)—Synon.: Called by some, but not very appropriately, *Miosis*, from *μείωσις*, which signifies diminution in *bulk*, and is already

employed as a technical term in rhetoric. Myosis is an unnatural smallness of the pupil, and may be mechanical, toxic, or neuropathic." Dr. Theodore Maxwell, in his *Terminologia medica polyglotta* (London: J. & A. Churchill, 1890), has the French term "Myose," which is defined "resserrement permanent de la pupille." In the New Sydenham Society's *Lexicon* "Myosis" is defined as permanent contraction of the pupil, while "Meiosis" is the status decrementi of a disease, or the period during which the symptoms abate. "Myotics," according to the same authority, are agents which cause contraction of the pupil.

#### ARMY MEDICAL SCHOOL, NETLEY.

**ARMY MEDICAL STAFF.**—The following is the official list of Surgeons on probation of the Medical Staff of the British Army who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—

January 31st, 1898.			
	Combined Marks		Combined Marks
* Browne-Mason, H. O. B.	5,322	Young, A. H. O.	3,996
† Penny, F. S.	5,099	Bourke, E. A.	3,866
Watts, B.	4,756	Lowsley, M. M.	3,597
Martin, H. G.	4,519	Lupton, A. C.	3,520
Berne, J. G.	4,241	Carter, G. B.	3,497
Carroll, F. F.	4,123	Ross, N. H.	3,493
Macpherson, J. D. G.	4,069	Collingwood, P. H.	3,120
Gwynn, W. P.	4,055	O'Gorman, C. J.	3,795
O'Grady, S. de C.	4,020		

**INDIAN MEDICAL SERVICE.**—The following is the official list of Surgeons on probation of the Indian Medical Service who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—

\* Gained the Pathology and Parkes Memorial Bronze Medal.

† Gained the Maclean Prize for Clinical and Ward Work.

January 31st, 1898.

	Combined Marks		Combined Marks
<sup>a</sup> Delany, T. H.	5,754	Hunt, S.	4,844
<sup>b</sup> Rait, J. W. F.	5,619	Sargent, A. G.	4,784
Douglas, S. R.	5,466	Cox, W. H.	4,779
<sup>c</sup> O'Meara, E. J.	5,392	Condon, de V.	4,740
<sup>d</sup> Tate, G.	5,072	Gidney, H. A. J.	4,641
Baird, R. F.	5,050	Kirkpatrick, H.	4,619
Gage, A. T.	4,892	Fayrer, F. D. S.	4,432
Laing, G. C.	4,857	Chitale, P. H.	4,421
MacPherson, G.	4,851	Lethbridge, W.	4,115

The Prizes were presented by General Sir Henry W. Norman, G.C.B., G.C.M.G., C.I.E.

#### INDIAN MEDICAL SERVICE.

THE India Office, Whitehall, S.W., has furnished the following official list of candidates who have been successful at the Examination held in London in February, 1898:—

1 Hunter, T.	3,470	9 George, G. F. S.	2,904
2 Battye, W. R.	3,345	10 Tucker, E. F. G.	2,886
3 Meakin, H. B.	3,215	11 Liston, W. G.	2,876
4 Hutcheson, G.	3,157	12 Thompson, F. S. C.	2,805
5 Anthony, R. W.	3,066	13 Twigg, H. J. R.	2,770
6 Stewart, G. E.	3,046	14 Orpen, C. W. M'G.	2,745
7 Boulton, H.	2,994	15 Novis, T. S.	2,721
8 Watson, J. W.	2,962		

#### EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY AND INDIAN MEDICAL SERVICES.

THE following are the papers which were set at the Examination held in February, 1898:—

*Chemistry and Materia Medica.*—Dr. Norman Moore. Friday, 4th February, 1898, from 10 a.m. to 1 p.m. N.B.—The replies to be written with the ink provided, and not with a pencil or pale ink. 1. Describe an experiment demonstrating the chemical composition of water. 2. What are the properties of phosphorus? Describe its modifications and mention (with their formulæ) the acids into the composition of which it enters. 3. What are the preparations (in the Pharmacopœia) of each of the following metals: mercury, bismuth, iron? 4. Mention the chief expectorants of the Pharmacopœia. State the dose of each (a)

<sup>a</sup> Gained the Pathology Prize and Herbert Prize.

<sup>b</sup> Gained the Montefiore Medal and Prize of 20 guineas, and the de Chaumont Prize in Hygiene.

<sup>c</sup> Gained the 2nd Montefiore Prize in Surgery.

<sup>d</sup> Gained the Martin Memorial Gold Medal.

for an adult, (b) for a child of five years of age. 5. Name the chief drugs used to procure sleep and the dose of each. What precautions ought to be observed in their administration?

*Surgery.*—Sir William MacCormac, Bart. Friday, 4th February, 1898, from 2 p.m. to 5 p.m. All four questions to be answered. 1. Enumerate the complications which may occur in a case of otitis media. Give the symptoms and treatment of abscess of the temporo-sphenoidal lobe dependent upon this cause. 2. Write an account of the course of a case of typical syphilis. Give the treatment you would adopt, and mention any matters of importance in arriving at a prognosis. 3. Mention two causes which produce ulceration of the cornea? Give a brief account of the treatment you would adopt in each case, the possible complications which may result, and the manner of dealing with them. 4. Give a description, pathological as well as clinical, of a case of carcinoma of the breast. Describe the varieties of the disease met with, and in the event of an operation being performed, mention any operative details you consider important.

*Medicine and Pathology.*—Professor McCall Anderson. Saturday, 5th February, 1898, from 10 a.m. to 1 p.m. 1. What is your opinion with regard to the following case: give the grounds for your diagnosis; say what treatment you would recommend; and, in the event of a fatal issue, what would you find *post mortem*:—A soldier, aged 32, was admitted into hospital on 4th December, 1897. He stated that he had always enjoyed fair health, but admitted that he had led a very irregular life. He complained of debility, some loss of flesh, excessive urination, and, above all, of a right internal squint of some weeks' duration; indeed, it was this which induced him to seek advice. On examination he was found to be pallid, rather weakly, and slightly emaciated, but there was no fever. The internal squint was pronounced, and he was quite unable to turn the eye outwards. There were no head symptoms, and the heart and lungs were healthy, while the digestion was fair. But the liver was greatly and uniformly enlarged; it felt very firm, and was not the seat of either pain or tenderness. The urine was very pale, 120 ounces per day, specific gravity, 1,013; it contained a small quantity of albumen, and an occasional granular or hyaline tube cast was discovered in the scanty deposit. Finally, on one shoulder there was a patch of eruption, about the size of the hand, which had appeared about 8 months before admission. It was composed of tubercles of a dusky red tint, with here and there an admixture of violet. Some of these had ulcerated and were capped with greenish crusts. The edge of the patch was rounded, abrupt, and elevated. 2. About what day of the fever does the eruption

make its appearance in the following diseases:—(a.) Rubella (German measles)? (b.) Morbilli (measles)? (c.) Scarlatina? (d.) Typhus? (e.) Enteric fever? (f.) Varicella? (g.) Variola? 3. How would you treat typical uncomplicated cases of—(a.) Lead colic? (b.) Ulcer of the stomach? (c.) Acute tubular nephritis? 4. Write down what you know with regard to beri-beri.

*Anatomy and Physiology.*—Mr. Makins. Saturday, 5th February, 1898, from 2 p.m. to 5 p.m. 1. Describe the urinary bladder in the male, and give its relations to surrounding structures. 2. Give a short account of the anatomy and functions of the tympanum and its annexes. 3. Trace the course and distribution of the musculo-spiral nerve from its origin to a point on a level with the external condyle of the humerus. 4. Describe the sequence of changes which carbohydrates and fats undergo in their passage through the body.

*Natural Sciences.*—Dr. Norman Moore. Friday, 11th February, 1898, from 2 to 5 p.m. Candidates may answer not more than 6 questions, and they must confine themselves to 2 branches of science only. *Zoology and Comparative Anatomy*:—1. Describe the arrangement of the bones in the forelimb of a horse. Point out how the forelimb of a horse differs from and how it resembles the forelimb of a man. 2. Describe the heart and circulatory system of an osseous fish. 3. Give an account of the structure and life history of amoeba. *Botany*:—1. A tree weighing 12 pounds when planted in a pot of earth in 1894 is found in 1898 to have doubled in weight. The pot is unchanged in weight. The earth weighs 4 ounces less than in 1894. Explain in what way the tree has obtained its increased weight of 12 pounds. 2. Give the characteristics of the following natural orders: malvaceæ, rosaceæ, labiatæ, scrophulariaceæ, solanaceæ. 3. Describe the method of fertilization in wheat, in the date palm, and in any species of orchis with which you may be acquainted. *Physics*:—1. What is meant by the specific gravity of a substance? How would you ascertain the specific gravity of a diamond? 2. Describe experiments illustrating conduction of heat and convection of heat. 3. Describe the structure and use of the gold-leaf electroscope. *Physical Geography and Geology*:—1. In what strata do the remains of the following animals occur, and in which they are most abundant: encrinites, ammonites, large saurians, marsupial mammals? 2. Describe the appearances which would indicate that a particular tract of land had once been occupied by a fresh water lake. 3. Define the following terms:—(1.) Fault. (2.) Isothermal lines. (3.) Metamorphic rocks. (4.) Granite.

## In Memoriam.

RINGROSE ATKINS, M.A., M.D., M.CH., R.U.I.

A **SO**RE loss has befallen this Journal in the almost sudden death, on Friday, February 4, 1898, of **DR. RINGROSE ATKINS**, Resident Medical Superintendent of the District Lunatic Asylum, Waterford, and for very many years the able Reporter on Nervous and Mental Diseases in successive volumes of *The Dublin Journal of Medical Science*. The immediate cause of Dr. Atkins' death was an attack of suppurative appendicitis, followed by rupture into the peritoneum, and collapse. He was but two days acutely ill, and he died at the comparatively early age of 47 years.

Educated in Queen's College, Cork, **ATKINS** graduated in Arts (1871) and Medicine (1878), in the Queen's University of Ireland, which was afterwards merged in the Royal University of Ireland. He was a Scholar, Prizeman, and Gold Medallist of the University. Soon after graduation he was appointed Assistant Resident Medical Officer to the District Lunatic Asylum, Cork. Five years later he was appointed, by the Lord Lieutenant, Resident Medical Superintendent of the District Asylum, Waterford—an appointment which he filled with conspicuous ability and success to the day of his death.

**RINGROSE ATKINS** was a model Superintendent. Highly educated, well-read, and conscientious, the well-being of his afflicted patients was the happiness of his life. It was no wonder then that he won the affection of his patients, and was marvellously successful in his practice. While still a young man he contributed to the *British Medical Journal* for 1878 his "Pathological Illustrations of Localisation of the Motor Functions of the Brain." Other communications of standard excellence came from his pen from time to time—as, for example his papers on "Arterio-Capillary Fibrosis," "Morbid Changes in Blood-vessels and the Nerve-elements of the Brain of the Insane," and the "Morbid Histology of the Spinal Cord in Insanity." We have already mentioned his classical Reports in this Journal.

**ATKINS** was an ardent lover of Nature and of Art alike, and this led him to travel, year after year, to quite distant parts of Europe, to North Africa, and North America. He was a skilful photographer, and on more than one occasion won the medal of the National Society for Photographic Art.

Of his private character it is impossible to speak in any but the highest terms. His was a finely-strung, sensitive, guileless nature. Truthful, considerate, and sympathetic, he lived and died loving and beloved.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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APRIL 1, 1898.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XV.—*A Case of Recurrent Idiopathic Pneumothorax, without Effusion, ending in Recovery.*<sup>a</sup> By J. MAGEE FINNY, M.D. Dubl.; Past Pres. R.C.P.I.; King's Professor of the Practice of Medicine; Clinical Physician to Sir Patrick Dun's Hospital.

THE subject of my communication is that of pneumothorax occurring in a previously healthy young man, without any effusion, and ending in recovery—to be followed by a complete recurrence, without effusion, and again by recovery. The rarity of such instances may possibly enhance its interest, and make it worthy of a place in the Transactions of the Royal Academy of Medicine.

For the following notes I am indebted to my clinical clerk, Mr. (now Dr.) William Moore, M.B. :—

CASE.—J. B., aged eighteen, stableman, was admitted on the first occasion to Sir Patrick Dun's Hospital on 6th Nov., 1897. He states that up to 3rd inst. he was quite well, but that on getting up that morning he felt a heavy weight all across the top of his chest, and when going to work he was suddenly taken with so violent a pain that he had to turn back. On his return home he went to bed, but he could not remain in it from pain in his chest and inability to breathe. He found that lying on the left side increased these

<sup>a</sup> Read before the Medical Section of the Royal Academy of Medicine in Ireland on Friday, March 11, 1898.

symptoms, and yet he was not very much better when up. This sudden illness came on without any previous illness or delicacy, strain or violence, and there was an absence of all cough or night-sweats preceding it. He says there is "no consumption" in any individual of his family, near or distant.

The day following the advent of his illness the pain left his chest almost entirely, except a slight catch in the upper part of the left axilla when he coughed. He has been ever since free from all pain and difficulty in breathing, and he can lie equally well on either side; and, except that he had been told by the dispensary medical officer of the necessity of seeking medical care, he should not have thought himself sufficiently ill as to look for admission to the hospital.

*Present Symptoms.*—On admission—three days after his being taken ill—he presented no apparent evidence of any sickness in aspect, manner, or decubitus, except that his weight was but 8 st. 13 lb., and his face and neck were covered with acne vulgaris. His respirations were easy (28); pulse, 96–100; temperature, 98°.

*Physical Examination.*—Inspection showed the left side fuller under the clavicle than the right, while its movements on respiration were very slight. The cardiac impulse was visible in the epigastrium and to the right of the sternum, and by palpation the heart's beat was to be felt to the right of the sternum in the parasternal line. There was complete loss of vocal fremitus over the whole of the left side. *Percussion* gave a hyper-resonant note over the cardiac region, and extended from the clavicle down to the seventh rib and the costal arch in front, and to the twelfth rib behind, while it extended quite to the middle of the sternum at the manubrium, and to the right sternal line at the level of the third rib. In the interscapular region the percussion note was not tympanitic, rather dull in tone, and probably due to the condensation of the collapsed lung at its root. In this region there was slight amphoric breathing. The respiratory murmur was inaudible everywhere over the left side, and vocal resonance very badly marked. Metallic tinkling was to be heard occasionally over the lower part of the chest, but it was very indistinct, and not induced by coughing or change of posture, while the *bruit d'airain* was beautifully demonstrated. There was a complete absence of all succussion signs. At the level of the nipple measurement gave the right side  $17\frac{1}{4}$  inches, and the left or affected side  $16\frac{1}{4}$ , or an inch less than the healthy side. On deep inspiration the right side expanded half an inch, the left side *nil*.



The heart-sounds were normal, though not heard in their natural position, but best at the fourth right intercostal space near the sternum. It was quite apparent then that the left pleural sac was full of air, filling it to its fullest limits and displacing the heart and mediastinal contents to the right of the sternum, and the stomach downwards well below the costal arch.

For a few days the metallic sounds were more or less imperfectly audible, but they then ceased. The amphoric breathing soon disappeared, and at no time throughout the patient's stay in hospital were there any signs of effusion, such as dulness on percussion in the lower region of the thorax, nor any splashing sounds. The *bruit d'airain* also disappeared about the 20th of November—that is, in about a fortnight after admission.

*Progress.*—The further progress of the case was unmarked by any change of symptoms, and the patient, who expressed himself as being always in the best of health, was allowed up daily, and he had an excellent appetite. His temperature was usually subnormal—about 98°, and occasionally down to 97°, and only on five occasions it was 99°—and the pulse ranged 70–80. He slept well. No medicine was deemed necessary.

Physical examination revealed that from about November 26 the air in the pleural sac was being absorbed, for in addition to the cessation of the echo sound on striking a coin—already referred to—the heart gradually returned to the left side, and on November 30th it was recorded “to be felt and heard beating in its normal position.” And later on the apex beat was marked as beating in the left parasternal line, but between the fourth and fifth ribs—an inch higher than normal.

During this process of return of the heart an interesting clinical phenomenon was noticed, although the patient made no complaint, pointing to the existence of a dry pleurisy in the neighbourhood of the pericardium. Thus, on Nov. 26th a friction sound was audible over the lower  $1\frac{1}{2}$  inches of the sternum, to the left of the middle line and extending into the epigastrium. The sound was that of a double rubbing character, and synchronous with the heart's sound, and yet it increased on inspiration and diminished on expiration. This, by some observers, was taken for a pericardial friction, but I considered it was exopericardial in its nature, and produced by the impact of the pericardium against the double fold of the left parietal pleura, and by the movement of the heart the layer lining the ribs and that reflected from the sternum over the pericardium came into contact, and gave rise to a friction sound. In fact, it was a rubbing of *one layer* (the parietal) against

itself, and not produced by the pulmonic or visceral layer against the parietal, as is usual in ordinary pleurisy.

Along with this sound of rubbing a metallic tinkle or echo was sometimes heard in this the usual cardiac region. A few days later (Nov. 30th) the friction sound was still more marked, and was audible from the third to the fifth left costal cartilages, and extended outwards to one inch within the nipple line, and downwards along the sixth and seventh cartilages—i.e., well below the level of the returning heart. It was heard, as formerly, with the heart-sounds, though increased with the act of inspiration, and also on that day it was not confined to the time of the heart-sounds, but was audible also during inspiration.

Gradually, as the signs of air in the pleural cavity diminished, the respiratory and vocal sounds became more distinct, and were fairly audible over the back and axilla; and the left side (though it now contained the heart) measured an inch less than the right. The patient left hospital on December 17, having gained half a stone in weight and looking well and healthy.

After leaving he went back to his work as a stableman, and in a fortnight's time as he was feeling as well as ever, he undertook some heavy lifting work with the manure fork. While thus engaged he felt a little "crackle" in the top of his left chest, but did not mind it much, until on getting out of bed next morning (December 31, 1897) he experienced a sharp pain in his left side, with great difficulty of breathing and weakness, and he fainted. He had a shrewd guess as to what had happened, as he recognised the old symptoms. He remained at home for a few days, and when admitted, on January 5, 1898, his left pleura was again found full of air, and the heart displaced to the right side of sternum, just as in November. He had no fever or any distress, and his weight was the same as when he had left hospital, December 17, 1897 (9 st. 5 lb.).

After remaining in hospital till February 3, 1898, he went home weighing the same, and the air in the left pleura was again diminishing, and the heart returning to the left. At no time was there any dulness or any sign of effusion present. The "echo note" by striking a coin was typically demonstrable for three weeks, but neither metallic tinkle nor amphoric respiration was ever noted. I did not see him again until March 4, when his weight was 1 lb. heavier, and the heart was beating in its normal position; the lower part of the left side expanded equally with the right, though it measured an inch smaller. Vocal fremitus and resonance were feeble on the affected side, and respiration was not

audible under the clavicle, and in this place the percussion note was somewhat tympanitic. It suggested the idea that while the lower part of the chest was well filled by the expanding lung the upper still contained some air in the pleura.

He was in excellent health and spirits and expected to return to work at once. I warned him against unusually heavy work for some weeks to come as a wise precaution.

There were some unusual physical signs on which a word may be said :—

1. The existence of amphoric respiration in my case in the earlier period, when the aperture was closed. It was not loud, it was limited to the left interscapular region, and it disappeared after the fifth day of residence in hospital.

Dr. West\* noticed in some of his cases of so-called idiopathic pneumothorax, in which there was no effusion, that amphoric breathing was frequently audible, even when the opening is closed; but he does not venture upon an explanation. The idea that it might be conveyed from the root of the compressed lung or of the healthy lung is negatived by the fact that it disappeared in the course of the case, while those supposed factors remained the same, so far as we could make out. Moreover it was absent in the whole course of the relapse.

As Dr. Clifford Allbutt, in Quain's Dictionary of Medicine, says, "In rare cases we may detect by amphoric breathing the entrance and exit of air by a free opening, but in such cases fluid is always present as well." On the other hand it is not easy to explain its occurrence where the opening is closed, or of the valvular nature, and where there was no expansion of the side during inspiration, nor falling in during expiration.

2. Another puzzling sign was the metallic tinkle which was audible for ten days, and yet I could never satisfy myself that there was any fluid present at any time. It is therefore no longer to be taught that the metallic tinkle is solely due to either a drop falling from the dome of the pleural cavity on the subjacent liquid, or to a bubble bursting on the surface of the fluid.

\* Medical Society's Transactions. Vol. XX. 1897.

3. The other clinical physical sign worthy of attention was the friction sound audible over the lower left sternal region, which was synchronous with the movements of the heart—even though increased and altered by the act of respiration—and which might readily have been called pericardial “to and fro” friction sound. I considered it to be due to the heart’s movements on its return to the left side causing a rubbing, not of the pericardial layers, but of reflected parietal layers of the pleura. When the pleural cavity was fully distended with air, the left lung and overlying visceral layer of pleura were naturally retracted towards the root, and widely separated from the parietal layer; while this latter was stretched towards the right side of the sternum, as it formed the left lateral boundary of the displaced anterior mediastinum. Now, when the air of the pneumothorax was being absorbed, and the right lung was gradually expanding with deeper respirations, the heart returned towards its normal position, and carried with it the parietal layer of the left pleura, so that this exopericardial layer was folded on itself, and a friction was induced at each cardiac movement. It never extended over the whole of the præcardium, nor to the right of the sternum, and it was unaccompanied by any symptoms of pericarditis—pain, altered pulse, rise of temperature, or any discomfort—while the patient was up and about every day.

The explanation of its being intensified during inspiration is, probably, that, although the left side was nearly motionless during the act of breathing, the movement of the right side and the pressure of the right lung against the air contained in the left pleura caused an altered relation of the pericardium and the reflected layer of the *pleura costalis*, and therefore this extra movement would intensify any friction sound made between the overlapping folds. That the movement of the left lung had nothing to say to its production was evident by the metallic echo these sounds produced, by the tympany which existed over the sternum and the front of the left thorax, and by the fact that the cyrtometric measurements of the chest, taken two inches below the level of the nipple, showed the left side to be  $1\frac{1}{8}$  inches smaller than the right; and lastly, by the heart’s impulse being felt between the

fourth and fifth ribs instead of in the fifth intercostal space. In fact, as I understand the pathological physiology of the process, the return of the heart was due to the diminished pressure of the absorbing air on the left side being overcome by the vigorous expansion of the right lung, and in direct proportion to that lessened pressure the ribs of the left side fell in and the diaphragm ascended.

Now, if we study the history of pneumothorax, the *cause* of the disease is at times readily explained, but at times again it is quite otherwise.

If we exclude injury to the thorax, operations, and thoracentesis, it is practically in 90 per cent. of cases the result of a ruptured lobule and its pleural covering, which had been previously weakened by ulceration, and the factor which induced the ulceration was tubercular deposit. A cavity, large or small, has existed for a longer or shorter time, and then ruptures under a little extra strain, or without any exciting cause, somewhat analogous to the occurrence of hæmoptysis as the first symptom of pulmonary phthisis being due to a prior tubercular deposit and ulceration.

There are, indeed, a few cases recorded of pneumothorax due to rupture of the air vesicles under great strain; but these are open to the criticism as to whether tubercle had not already undermined those vesicles prior to the strain and the rupture. Dr. F. de H. Hall has had thirteen cases of pneumothorax occurring in apparently healthy persons who made recoveries in from five days to six weeks. Many of these, however, developed phthisis afterwards.

It has been asserted that emphysema may be a cause of pneumothorax, but against this Dr. West adduces a reference to an excellent paper on the subject by Zahn (Virch. Archiv., Vol. CXXIV., p. 265), in which, after a careful analysis of a large number of records, the author stated that only two cases had been conclusively shown to have resulted from a rupture of an emphysematous bulla.

The peculiarity in this present case is that the young man was not suffering in any way, or to the slightest degree, from lung disease. He had no cough, nor even slight cold, when the lung gave way, and it occurred irrespective of any unusual effort or straining on the patient's part on the

first occasion of his illness. He was going to his work in the early morning, without hurry or any excitement, when he suddenly felt a pain in his left side. Unfortunately for the sake of diagnosis he was not seen until four days after its occurrence, and we are at a loss to know how severe were the symptoms, or how great the shock. Neither can have been very much, as after one day the patient complained of nothing beyond a slight pain across the sternum between the breasts, and said he felt quite well on the day of admission. On the second attack the shock seemed greater, as it induced faintness.

This is, I think, a very remarkable fact, and one which we do not sufficiently recognise—namely, that a rupture of a lung may take place, air pass through the aperture from the lung into the pleural sac, and so fill the pleura to its extreme limits that the lung is collapsed and the heart and the mediastinum displaced to the right side, without more than momentary distress of breathing and slight discomfort, without hæmoptysis, cyanosis, or much circulatory disturbance. The only other causation of collapse of the lung and displacement of the heart, with which we are familiar, is the effusion of fluid in the pleura, the result of acute pleuritis; and in such cases, if at all rapidly produced, the process is always accompanied by dyspnœa, cough, and the expectoration of mucus, and very frequently the sputa are bloody, while the decubitus, when the pleural cavity is filling up with fluid, is characteristic, and these symptoms are generally in the direct proportion to the suddenness and rapidity of the lung collapse. I do not now allude to a latent pleurisy, with which we are all familiar, where the discovery of the side being full of water is unexpected; for in such cases the process is very slow and gradual. Yet in my case the left lung was suddenly and completely rendered airless, and in a day or two, except an examination of the chest had been made, the patient, so far as his symptoms were a guide, might readily have passed all notice as suffering from a grave thoracic disease.

A very similar case has been recorded by Samuel West, M.D. Oxon.,<sup>a</sup> which is worth mentioning in full:—

<sup>a</sup> Loc. cit.

"A man aged forty-six, while at work experienced pain in his left side, and his breathing became a little short; he did not, however, desist, but kept to his work. He was seen next day by a medical man, who, detecting the signs of pneumothorax, sent him to hospital, although the man himself did not think he was ill. Physical examination revealed the whole of the left side tympanitic to the very margin of the ribs; the heart was displaced to the right, and the impulse was under the right nipple, and the left pleura was stretched  $1\frac{1}{2}$  inches to the right at the third rib. Amphoric respiration and the bell sound were audible in the left interscapular region.

"This patient soon recovered, gaining 14 lbs. during his stay of a month in hospital, and all the signs disappeared, though two or three slight attacks of hæmoptysis occurred. Ten years later he was at his work, and had never been ill in the interval. The chest was reported normal."

In the majority of cases the most striking group of symptoms of this disease are those due to its sudden and severe onset, such as pain in the side, dyspnœa, and suffocation, with the pallid face, clammy skin, and compressible and failing pulse of collapse. As Dr. West points out, this is the period of greatest danger, and death may be the direct result. As a rule, he says, the mortality of pneumothorax, from all causes, may be stated to be 77 per cent. Of these fatal cases 46 per cent. occur in the first week, and one-third of that number on the first day, of suffocation. Should this period be survived, death may occur from empyema or exhaustion, or lastly, the original disease, of which pneumothorax was but a complication, may make rapid strides and carry off the patient.

As already stated, my case—the subject of this communication—is a remarkable exception to these grave symptoms, although hardly so much so as the case of Dr. West's patient to which I have referred above.

Another point of exceptionable interest to which I would specially refer in my case, is the fact that the entrance of air into the pleural sac, so great as to fill the sac to its extremest limits, was not followed by effusion, either serous or purulent. This is an extremely rare condition. It is



one, however, which is well recognised, and has been noted many years ago. Probably the cause may be traced to the fact that the air was introduced through a rupture of a lung very little, if at all, previously diseased, and that the aperture was so placed that there was no free communication with the external air and the pleura after its first introduction, and thus the entrance of germs and bacteria was limited. In almost all the recorded cases of pneumothorax where a phthisical cavity had existed prior to its occurrence, the entrance of air was invariably followed by an effusion, usually purulent in its character (pyo-pneumothorax), and this is the experience of all hospital physicians. Curiously enough, as if to point my remarks, a fortnight after this patient left hospital well, another case of pneumothorax was admitted to the same ward, and bed, occurring in a man suffering from phthisis, and this patient has had the purulent effusion, and all the evidences thereof, and died of the exhaustion and septicæmia of the original disease in eight weeks.

Dr. West in 1883 presented before the Clinical Society of London (Clin. Soc. Trans., Vol. XVII., p. 56) a series of 23 cases, compiled from various authors, of pneumothorax without effusion, in all of which complete recovery occurred, to which he added another case. Of these 24 cases, 4 were from phthisis, 4 probably of that nature, 5 were stated to have their cause in emphysema, 2 were from over-exertion in previously healthy and athletic persons, and 3 the result of injuries. As a matter of historical and local interest the first case was one recorded by Dr. MacDowel, of this city (not Dowel), and published in the *Dub. Hosp. Gaz.*, No. 15, Sept., 1856.

Dr. Brünnicke, of Copenhagen, in a valuable communication on the subject of pneumothorax, and which appeared as a translation in the *Dub. Hosp. Gaz.* (Nos. 7, 8, and 10, 1856), states that of 147 cases which he had collected and analysed, fluid was absent in but 16.

Again, more recently Dr. West (*loc. cit.*) has recorded 5 cases out of 130, in which effusion was noted for its absence. Two were phthisical, and the other three were—(1) the labourer whose case I have quoted; (2) a young man, aged twenty-two,



while playing football, who had had two previous attacks of pneumothorax; and (3) a girl, aged fifteen, while dancing.

Dr. Clifford Allbutt also contributes three cases, in Quain's Dictionary of Medicine, which came under his immediate notice, and all occurred in previously vigorous men—due to a strain at an oar in one, and to gymnastics in another, and in the third the cause was unknown. All these made good recoveries.

From the foregoing facts and references I may deduce the following conclusions:—

1. That simple or idiopathic pneumothorax is a very rare disease of the lungs and pleura.

2. That a repetition of the disease in the same lung is of still greater rarity.

3. That in a very small number of cases the entrance of air into the pleura—to stretch it to its utmost limits—does occur *without any effusion* of fluid, and this even may happen a second time in the same lung.

4. That the absence of fluid renders the disease less fatal than when air and fluid are effused.

5. That the presence of air in the pleura may occur without any febrile or constitutional disturbance.

6. That in the face of such possibilities we should be cautious as to giving too grave a prognosis when evidences of a ruptured lung and pleura are present, and particularly so when there is no previous disease.

7. That the tendency of such cases is towards spontaneous recovery, and, in the absence of urgent symptoms calling for relief, it is wiser not to employ surgical means to let off the effused air.

ART. XVI.—*A Study in the Surgery of Joints.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

I HAVE already vigorously advocated the use of chloroform in the adjustment of complicated fractures, and now desire to call attention to the necessity for thoroughgoing surgery in the reduction of dislocations. I shall, for the moment, confine myself to a study of the ill-effects of injudicious manipulations of the elbow-joint after displacement backwards of both bones. We are all acquainted with the injuries so often detailed of tendons, vessels, and nerves, but we are not forewarned of the disasters which are of more frequent occurrence. We rarely see lacerations of vessels or nerves, while the number of cases we meet of partially reduced dislocations, complicated by epiphyseal separation or supra-condyloid fracture, is truly alarming. I hold that these are always due to violence in a wrong direction, and, for the most part, while the muscles of the arm are on the alert. There is no reason for undue haste in the reduction of these displacements. Nor is there justification for the application of undue force. If a dislocation does not yield to gentle effort, the muscles should be overcome by an anæsthetic, when usually no trouble is experienced in replacing the bones. A word-picture is poor compared with the views obtained on the operating table; but, assisted by the accompanying illustrations, I hope to make clear some of the untoward effects the presence of which dissection has verified.

If it be pernicious in recent cases to use violence in attempts at reduction, the folly of efforts at forcible reposi-  
tion in old-standing dislocations is akin to criminal. This becomes impressed upon one more and more as occasions arise for opening the elbow-joint to undo the mischief arising from well-intentioned manipulations conducted with undue vigour.

When the olecranon is sawn across, the remnants of the lateral and posterior ligaments cut, and the condyles freed of muscular attachments, no little force is required to safely bring the parts into favourable position. How vigorous



PLATE I.—MR. M'ARDLE ON JOINT INJURIES.



CASE I.—Showing tip of olecranon fixed in fossa.

must be the effort that will reduce an old-standing dislocation can only be understood when one has over and over again examined, as in these cases, the strength of adhesions, and the great difficulty in getting the coronoid process to glide without fracture over the trochlear surface of the humerus. My experience is that in young subjects the chief danger of attempting such reduction without anæsthesia, is injury to the epiphysis of the humerus; while in adults fractures of the coronoid or of the olecranon or anterior part of the head of the radius is more likely to occur. Any of these accidents is certain to be followed by great impairment of the functional activity of the joint.

I have in children seen fracture of the shaft of the humerus as a result of vigorous traction on the fore-arm, with the knee in the antecubital fossa; while in the adult over-flexion of the arm when the bones were supposed to have been replaced has led to fracture of the olecranon. The first case to which I would call attention is of this class, and when I cut down on the joint the amount of fibroid tissue filling up the olecranon fossa and fixing the bones gave ample evidence of the vigorous procedures adopted to restore the bones to place, even after the olecranon had given way.

#### CASES—FIRST SERIES.

CASE I.—Mrs. C., aged fifty years, came under my care on April 4, 1897. Seven months before she had sustained a dislocation at the elbow-joint. After many violent efforts at reduction the bones were supposed to have gone into place. Later on passive motion was carried out, but with very little benefit, when I examined her the joint was greatly swollen, the enlargement being firm. There was practically no motion. On passing my finger along the posterior edge of the ulna a sharp edge could be felt towards upper end, and less than half an inch above, the tip of the olecranon could just be felt in the fossa, from which it could not be moved. Plate I. represents the condition more clearly than it can be described. As the arm was practically useless I carried out the following operation assisted by Mr. Tobin:—

A four inch incision (with its centre over the line of fracture) was carried along the posterior edge of ulna and over the triceps tendon. The fibroid tissue filling up the interspace between the fragments, and occupying the olecranon fossa, was thoroughly removed by the knife, and the osteotribe figured here. Vigorous

flexion of the arm now gave free access to the upper fragment of the olecranon which was found to be firmly fixed (as seen in

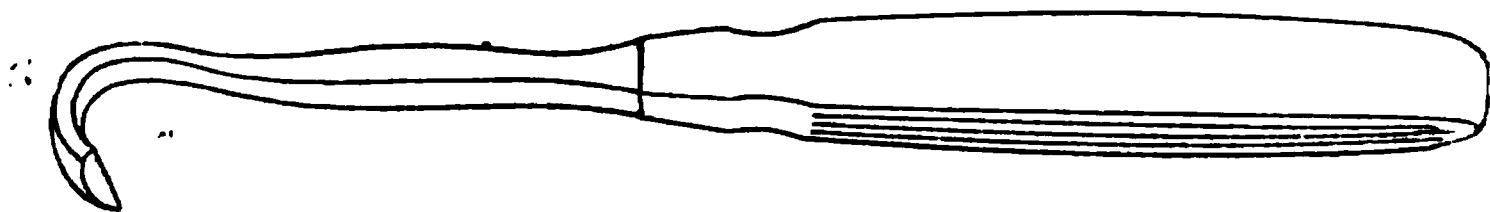


Fig. 1.

Plate I.) to the upper part of the fossa. A chisel was insinuated between this fragment and the humerus; and using it as a lever the bone was sufficiently elevated to be grasped by the lion forceps here depicted.

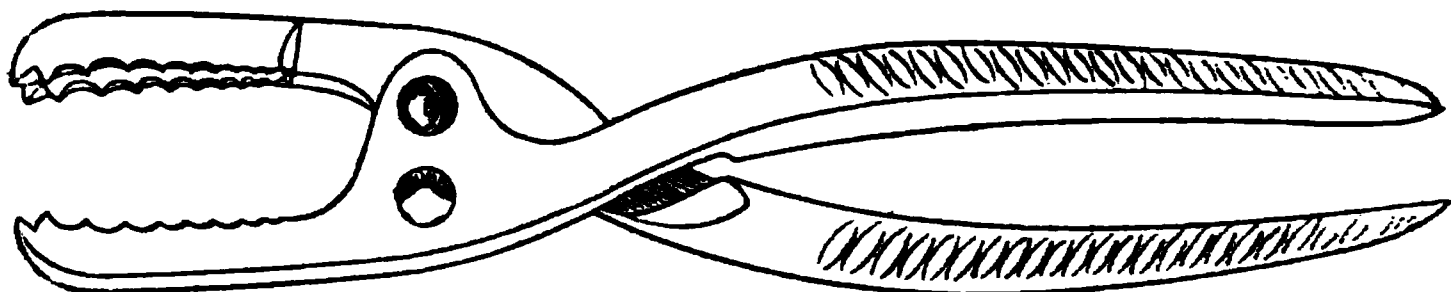


Fig. 2.

The jaws of this instrument, as seen, cannot come quite close, and so crushing of the bone is avoided. Fixed by this forceps, the fractured surface was sawn off, and the piece was freed by incisions on either side of the triceps tendon. Now the ulnar side of the fracture was refreshed by the saw here shown. I now

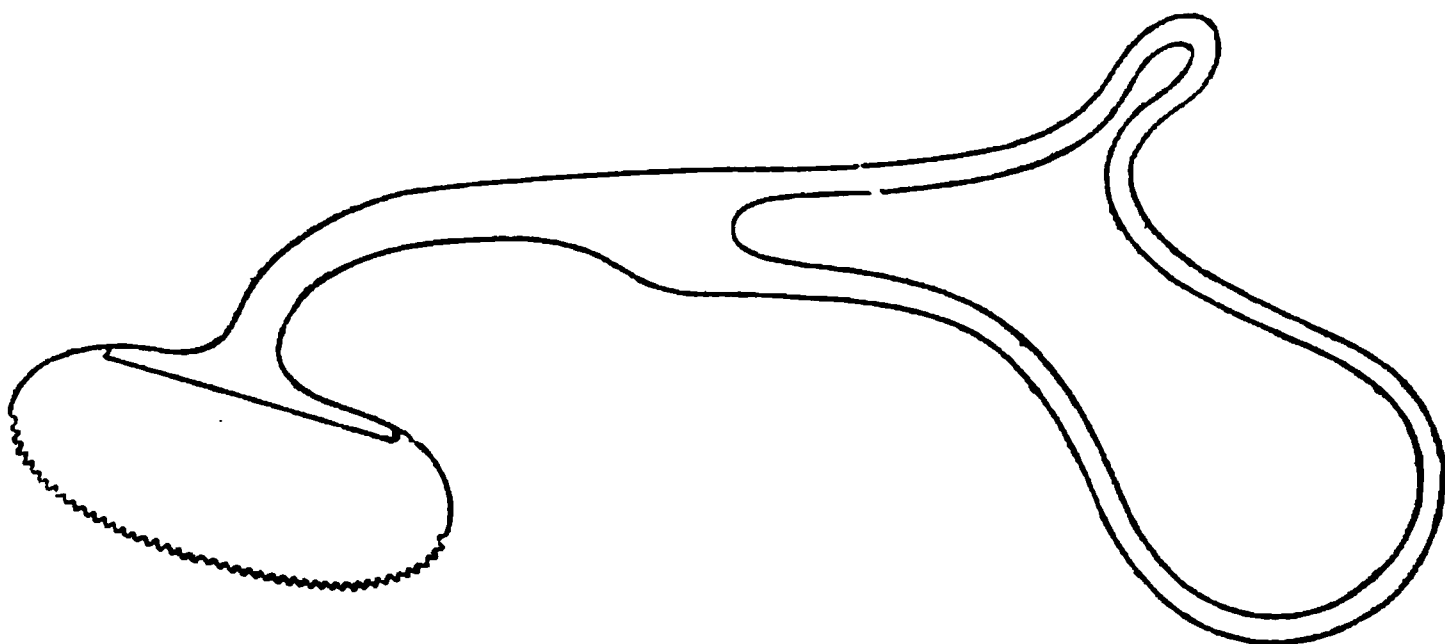
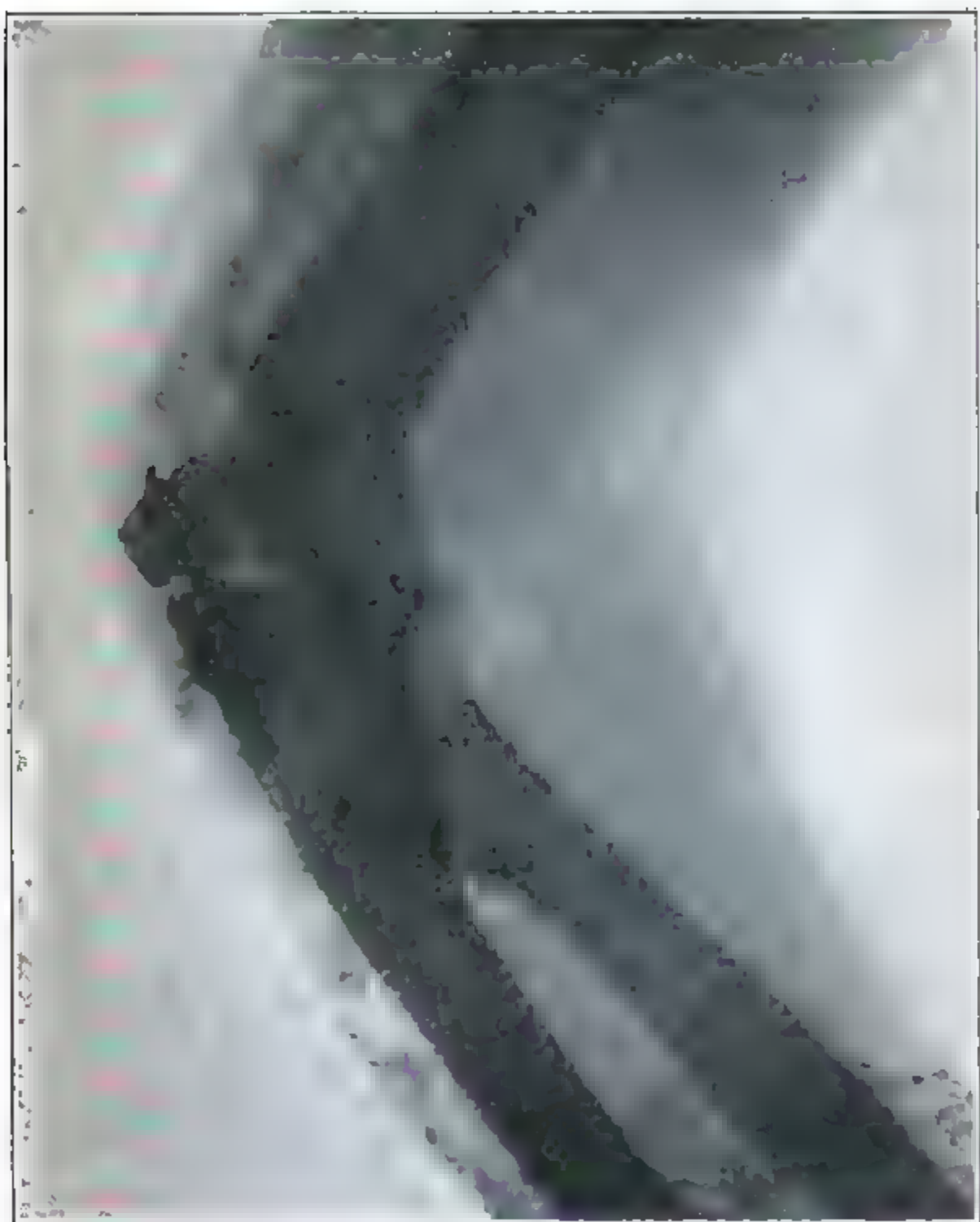


Fig. 3.

drilled the fragments and brought them together by No. 12 silver wire. The result of this is shown in the X-ray photo (Plate II.) taken six weeks after operation.

**PLATE II.—MR. M'ARDLE ON JOINT INJURIES.**



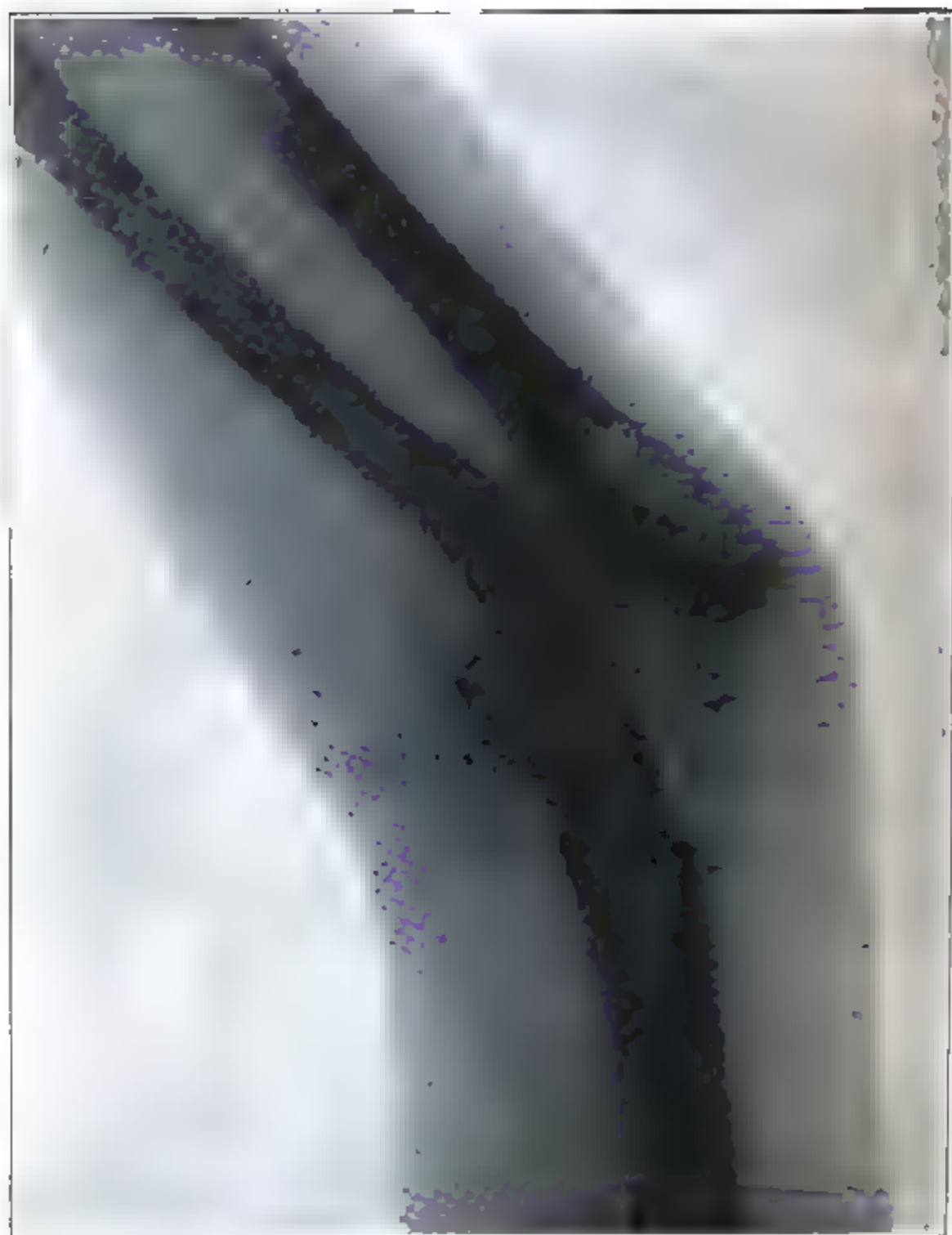
**CASE I.—Showing fragment of ulna released and fixed by wire suture.**







**PLATE III.—MR. M'ARDLE ON JOINT INJURIES.**

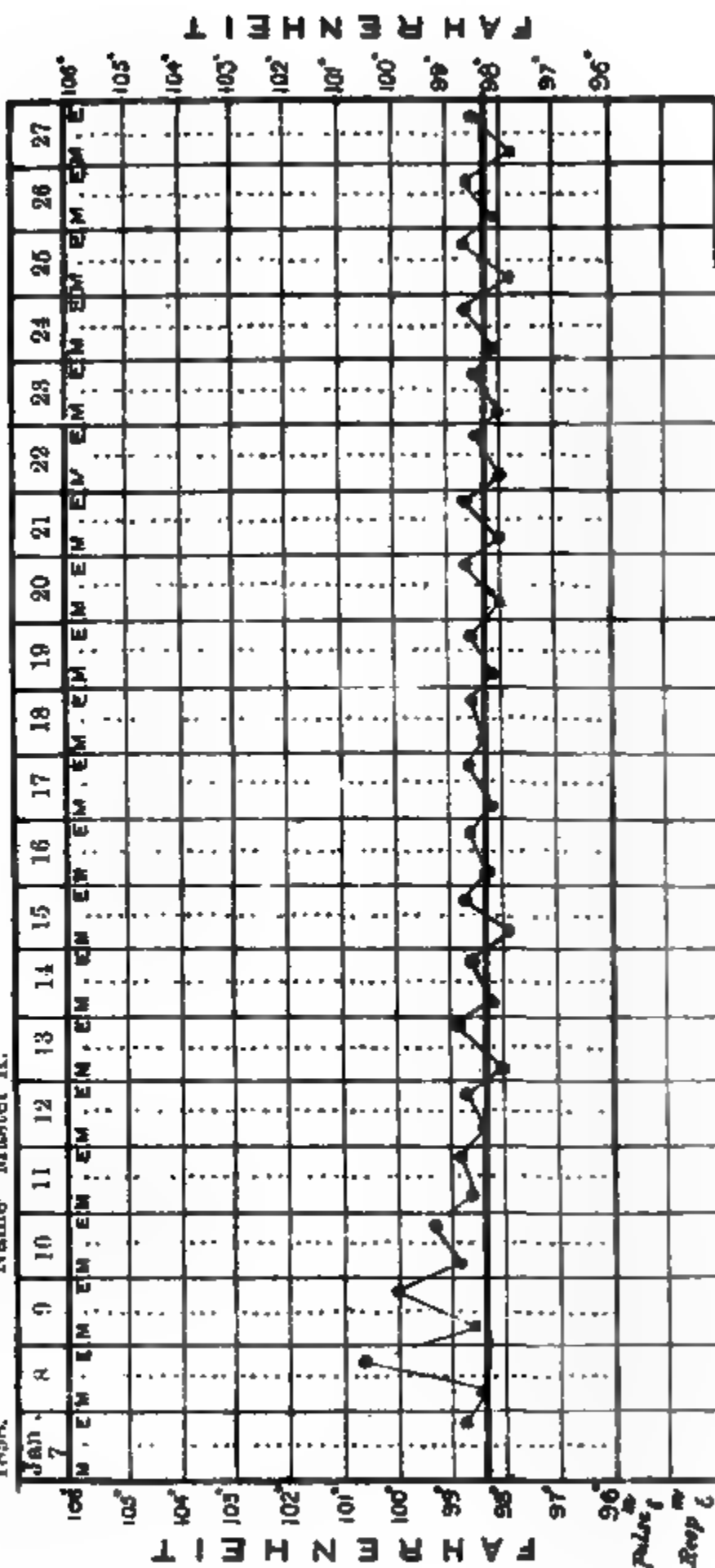


**CASE II.—Backward dislocation of both bones at elbow.**



# CLINICAL CHART OF TEMPERATURE

1919

Name: Master K.

The result in this case was everything that could be desired, motion being unrestricted by the eighth week. A study of this picture shows that only in the line of the wires is there any attempt at bony union even at the end of the sixth week, and it should convince us of the necessity for great care in passive movement of the joint, which should not be started before the end of the third week, and then only to a limited extent.

CASE II.—Master J. K., aged thirteen years, came under my care on the 7th January, 1898, and gave the following history. Early in August he fell from a donkey, and sustained a dislocation backwards of both bones of fore-arm; an immediate effort at reduction seemed to be successful, and after some days, passive motion was commenced. Little success, however, attended this procedure, and although it was continued for many weeks no appreciable improvement occurred. I found the arm in a condition of almost fixed extension, and on taking the X-ray Photo (Plate III.), it was seen that the dislocation was unreduced. Effusion into and round the joint had obscured the bones, so that digital examination was of little use. I made an effort under chloroform to bring the bones into position, but to no purpose. After a few days rest to the parts I again placed the patient under an anæsthetic, and opening the arm by Langenbeck's posterior incision over the olecranon, I gained free entrance to the joint by sawing through the base of the olecranon. Forcible flexion freed the parts very much, and enabled me to elevate the periosteum of the condyles of the humerus, and with it the origins of the flexors and extensors. This, and section of many dense bands around the bones were necessary to allow me to restore the bones to their proper place, and even then the restoration was not an easy matter, great force being rendered necessary by the amount of fibroid material fixing the bones in the abnormal position.

I now brought the olecranon down with the forceps, above depicted freeing it somewhat by section of the triceps tendon, and much adventitious tissue which fixed it to the olecranon fossa.

A wire suture, as in the last case, secured the olecranon to the shaft of the ulna, and I was able to flex the arm at once to the position shown in Plate IV. I had already prepared the splint here shown (Fig. 4), which I now applied. From the first he had no pain or uneasiness, and the accompanying Chart shows

that notwithstanding prolonged manipulation the temperature was favourable.

Movements of the fingers were commenced on the fourth day, the wrist on the eighth, and a few days later supination and pronation were carried out. The wound was soundly healed on



Fig. 4.

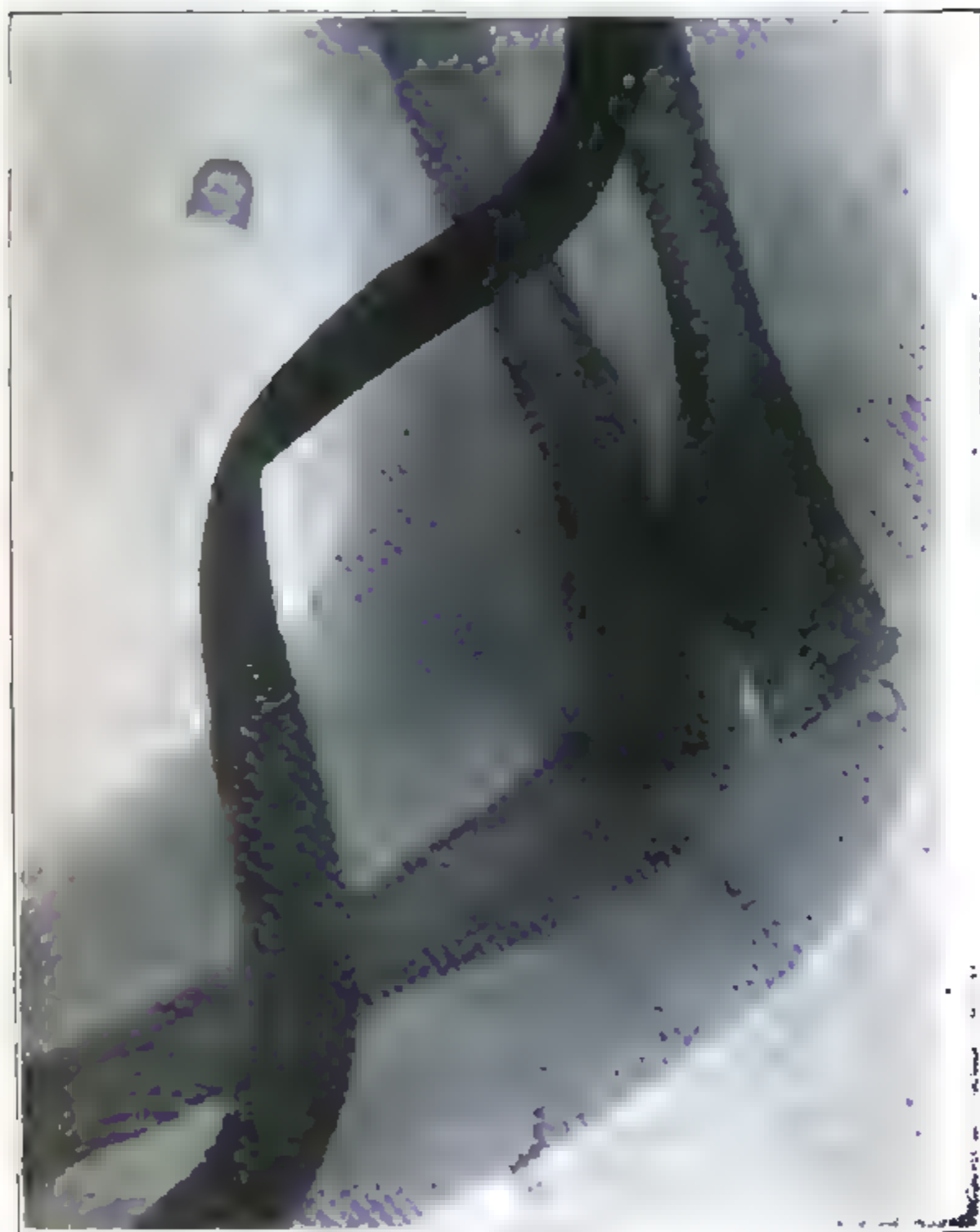
the eighth day, when the silkworm gut sutures were removed ; on the fourteenth day extension of the forearm was carried out, but flexion beyond a right angle was not allowed for fear of separating the fragments ; on the twentieth day the accompanying photograph (Plate IV.) was taken, showing the parts in accurate position.

Now, the joint was encased in light plaster of Paris, in position of semi-flexion, and the patient allowed home. He had movements of supination, and pronation in perfection, and all swelling had disappeared from the neighbourhood of the replaced bones.

On Friday, March 11, after having again photographed the bones in this case, I flexed and extended the arm, the range of motion being very free indeed. The bones are, as seen in the accompanying picture, in perfect position and outline, and union by bone is complete (see Plate V.).

Thus exactly two months from the date of operation we find sound bony union has occurred. I think a study of X-ray pictures will prove of great value in judging of the

**PLATE IV.—MR. M'ARDLE ON JOINT INJURIES.**



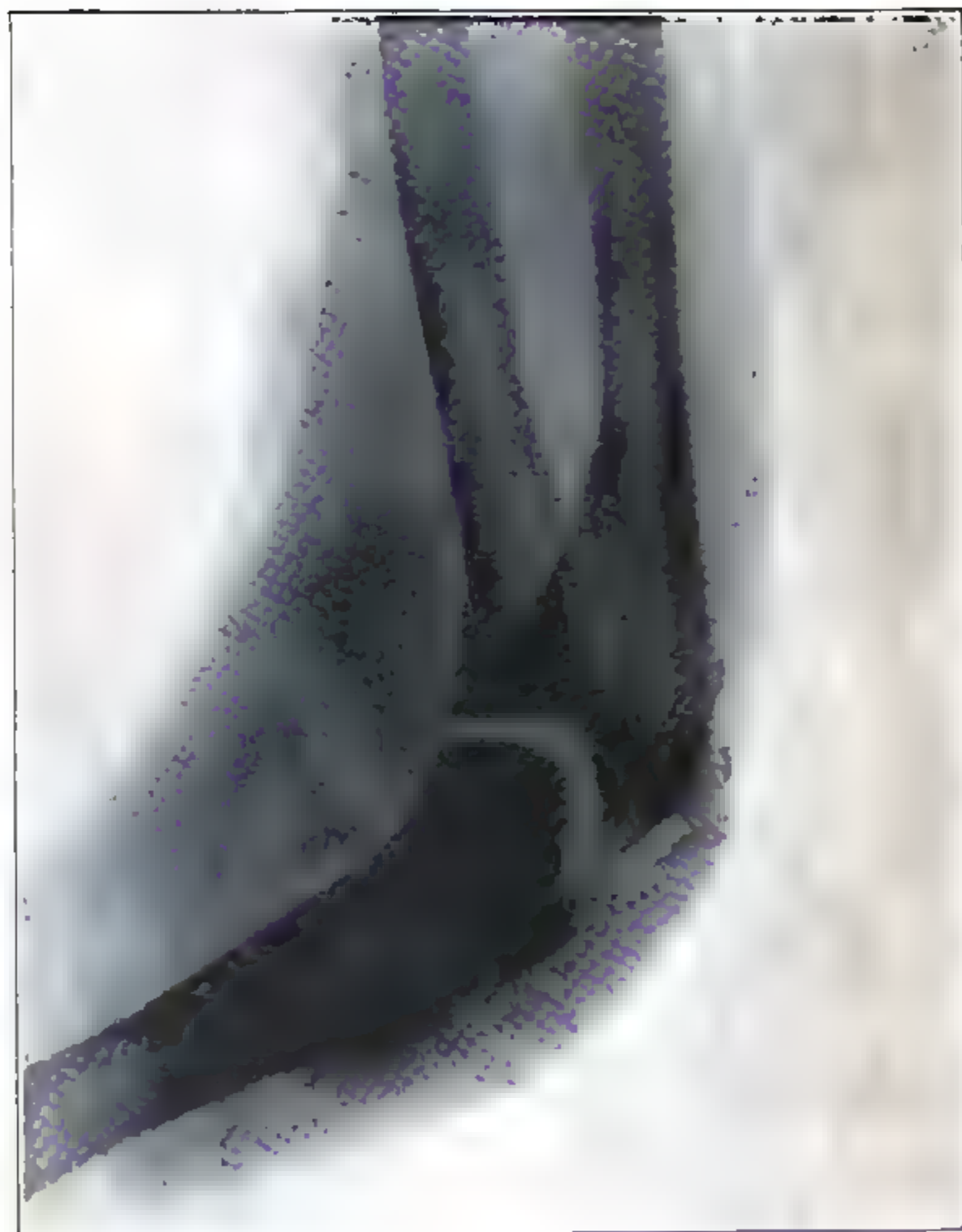
**CASE II.—Six weeks after section and suture, showing line of bone section.**







PLATE V.—MR. M'ARDLE ON JOINT INJURIES.



CASE II.—Eight weeks after section and suture, showing complete union.

proper time for allowing movement after operations on bone. It will be seen by the photographs here shown how different the course of repair is in the child and in the adult—only a faint line of bony union appears in the adult bone after six weeks, while in the child union is quite complete in the eighth week.

These are uncomplicated cases, and so I have selected them for an introduction to this study of a class of joint injuries of very frequent occurrence. Plate V. represents the condition of Case II. eight weeks after operation.

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ART. XVII.—*The Housing of the Poor in Dublin.*\* By HENRY C. TWEEDY, M.D., Univ. Dub.; F.R.C.P.I.; Diplomate in State Medicine, University of Dublin; Physician to Steevens' Hospital; President of the Section of State Medicine in the Royal Academy of Medicine in Ireland.

IN welcoming you to the opening meeting for 1898 of the State Medicine Section of the Royal Academy of Medicine, it is my first and most grateful duty to offer to you my very warm thanks for the honour you have done me in appointing me your President, and to express a hope that during my term of office the Section may continue to show the same abundant signs of vitality that have characterised its meetings during the reign of my predecessors in this chair, and which you also see amply evidenced in the programme now set before you.

Not, indeed, that the President can claim any great credit for the exuberant vitality to which I have alluded. It is to another officer the meed of praise for this is justly due—an officer who, though he shines not with an ephemeral lustre from a Presidential chair, is yet the main source of light and vital energy to a Section—I allude to the Secretary; and it is with pride and pleasure that I would remind you, were it not superfluous to do so, that it is to the untiring exertions of Dr. Ninian Falkiner, and to the support he has

\* The Presidential Address delivered before the Section of State Medicine in the Royal Academy of Medicine in Ireland, on Friday, February 18, 1898.

received from his colleagues, that this success may be almost entirely attributed.

In this Royal Academy of Medicine the State Medicine Section exercises an important and unique function. While in the other Sections the subjects under discussion must be dealt with from a strictly technical standpoint, this Section of ours has, in many respects, a still more peculiar and responsible rôle to play, in that it deals largely with questions having a wider scope than those which would claim merely the professional interest of the physician or the surgeon. Here we are brought more into touch with the needs of the community at large, and it has often seemed to me that it would be highly desirable—could certain manifest difficulties be got over—if, instead of merely embalming the results of our labours, and then entombing them in the mausoleum of the Transactions, there to lie till disinterred by some curious student of the antique, the meetings of this Section might be made more popular in their character, and that persons interested in questions affecting Public Health might be introduced to assist in our deliberations, and learn with those who have had special opportunities for studying such questions the blots that are to be found in our sanitary laws, and the means that might be suggested for removing them.

It is to the consideration of one of these blots that I would ask your assistance this evening—viz., the difficult, nay, almost insoluble, problem of the Housing of the Poor.

It was said by the greatest Philanthropist the world ever saw—"Ye have the poor always with you," and it is not probable that in Dublin, at all events, we are likely to forget this fact; nay, the very knowledge of it has created channels through which relief in various forms reaches the poor. Nowhere in the world, perhaps, are they better cared for in the way of hospitals and medical advice, and there are also numerous charitable organisations for supplying them with clothing, food, and fuel; but when we come to look at their homes it is then that the gaunt spectre of misery and discomfort faces us in all its hideousness.

Compare this state of things with the lot of the average artisan, earning steady wages, and having constant employ-

ment; the conditions under which he lives contrast in every way favourably with those of his poorer neighbours.

The Dublin Artisans' Dwellings Co. and numerous other building societies have, of late years, supplied a great public want by constructing roomy, well-ventilated, healthy tenements, provided with every modern sanitary requisite, and with a weekly rental of from 4s. upwards; but there is a class—a very large class—who would find it utterly impossible to pay even the moderate rent of 4s. per week. On examining the census returns for Dublin in 1891, we find that out of a population of 349,394 there are under the classification of hawkers, porters, labourers, the large number of 83,472 persons, or about one-fourth of the entire population.

Let any reasonable person ask himself the question—how could a rent of even 4s. a week be paid out of the precarious earnings of such as these?

But what becomes of them? Where do they live?

Through the kindness of Sir Charles Cameron I can lay before you a few interesting figures which throw some light on this part of the subject.

He informs me that for the purpose of inspecting tenement houses the city is sub-divided into 16 districts, each district having a distinct officer.

That he had estimated that there were about 54,000 families in Dublin inhabiting 24,000 houses. But how were these distributed as regards numbers—16,000 houses out of the 24,000 were inhabited by 22,000 families, and the remaining 8,000 houses, containing about 48,000 rooms, were inhabited by 32,000 families, allowing only about one and a half rooms to each family.

This state of overcrowding is bad enough, but worse remains behind. Most of the houses used as tenement houses in Dublin are old, varying from 100 to 200 years. They were formerly inhabited by the wealthier class, but have gradually fallen into decay more or less; and having been built at a time when sanitary science was not even thought of, are in many instances utterly unfit for human habitation.

Now, independently of the manifestly injurious effect produced upon the health of our poorer fellow-citizens by this mingled condition of squalor and overcrowding, the moral

deterioration that accompanies it is even more to be deplored. The social reformer, preaching cleanliness and temperance, is here met with a practically insurmountable obstacle. What inducements have these wretched people to be clean or temperate? The first is rendered almost impossible by the nature of their environments, and if they seek in the glare of the publichouse some of the brightness they find not in their homes, and endeavour to dull their senses into a temporary oblivion of their wretchedness, is it for us to cast a stone at them? More especially when they are paying for all this squalor, more in proportion than the wealthy inhabitants of the squares are paying for their luxurious homes. Anyone taking the trouble to walk through the slums of this city can verify these facts for himself. He will find countless instances of exorbitant rents being paid for rooms, in many cases, unfit to be habitations for swine, while the proprietors of these miserable tenements are reaping a rich harvest from the scanty earnings of these miserably poor people.

It is not for a merely idle purpose I venture to inflict upon you a thrice-told tale like this. No; we are face to face with a great social problem, which not only remains yet unsolved, but to solve which only too little effort has been made up to the present.

Even for the miserable accommodation of which we have been talking the demand is greater than the supply, and nothing remains but that last refuge, the workhouse, one of the most glaringly demoralising institutions ever devised or made use of by a civilised community.

With the exception of the inmates of the union hospitals and the infirm wards—the two redeeming features of the system—here one may see crowds of fairly strong men and women doing nothing, or almost nothing. They cannot be employed at remunerative labour, as the cry of underselling would at once be raised, and there they drift along, in an unhealthy moral atmosphere, till they get tired of the place and go out to seek a precarious subsistence elsewhere, their places being rapidly filled by a never-failing stream of miserable successors.

It is astonishing to think how little has been done to remedy this crying evil.

The Corporation of Dublin have, no doubt, made some praiseworthy efforts in this direction. They have built a few tenements of the kind that are needed—that is to say, with rents from 2s. per week downwards—any higher rent than this being beyond the reach of the classes of which we are speaking. The Corporation have in all 83 tenements of this class, as I am informed by Sir Charles Cameron—46 at 2s. a week, 14 at 1s. 9d., and 23 at 1s. 6d.

They are also clearing away in various districts blocks which no doubt ought to come down, but it has been complained to me, over and over again, that the unfortunate people who are thus turned out of their homes, wretched though they were, have literally nowhere to go save to the workhouse.

With, doubtless, the best intentions in the world, the Corporation of Dublin have not a free hand in this matter. Dwellings of the description required, and containing tenements which could be let at rents varying from 2s. downwards, could not be constructed save at a loss, and the financial powers of the body are limited. They have not sufficient borrowing powers, and yet it would seem to be very clearly the duty of the municipality to provide accommodation of this type, and by doing so, as opportunity offered, the plethora in the unions might be relieved, and some much needed economy effected in that direction, the results of which might go towards a building or improvement fund.

But, independently of constructing new blocks of buildings, there is another way in which suitable accommodation could be provided, and that at comparatively moderate cost.

The tide of fashion in Dublin, as in many large cities, has of late years flowed steadily in the direction of the suburbs, which one sees increasing daily in size and importance. In consequence of this exodus, there are numerous houses in streets formerly fashionable which might be purchased or rented at figures comparatively low. These, however, though antiquated in construction, are well and strongly built, and by suitable internal alterations could readily be modified into healthy and commodious tenements.

And now as regards the financial question may I offer one hint or suggestion in conclusion.

Is there any legitimate way in which the Corporation of Dublin could so increase its finances as to be able to effect these most desirable improvements, without imposing any additional burden on the ratepayers? I believe that there is, and that, too, without any sweeping legislative changes, but merely by using machinery already in existence, though allowed to rust from want of use.

I allude to the periodical revision of the valuation of house property, and, as a consequence, the insuring of a less glaring disproportion between the valuation and the rent than exists in many cases at present. This is neither the time nor the place for going into this subject in detail, but I will merely ask your forbearance while I offer you two illustrations.

In the principal business streets of Dublin there are numerous houses in which it is seen that the lower story is a shop and the upper stories are let as offices for which a high rent is usually paid; now if you look at the valuation of houses such as these, it will frequently be found that the gross rent paid for the house, including the shop and offices, is far in excess of the valuation.

Again, in the case of the tenement houses, of which we have just been speaking, here the discrepancy is even more remarkable, as in many cases the rent is four or five times the amount of the valuation, and even more.

Were the law then put into force which requires a periodical revision of the valuation of the entire city, and were that valuation caused to bear a fixed proportion to the rent in all cases, the financial result would be very startling; and I am convinced that in this way, without putting additional pressure upon anybody, the municipal revenues would be sufficiently augmented to admit of the carrying out a much-needed reform, and of raising, in the improved moral and social well-being of our poorer brethren, a lasting monument of the enterprise and philanthropy of our city.

The Royal Academy of Medicine is not an executive body, nor has it any power to carry out measures which it believes to be urgently required, but, as I said at first, this Public Health Section has a most important and peculiar function



to discharge—namely, the moulding of public opinion and the guiding of public action in the direction of much-needed reforms; but our efforts are cramped, our horizon is limited. Many of us here are brought into daily contact with the poor, and have learned something of their wants, their needs, their difficulties, in the only way the lesson can be learned—viz., by personal contact with them.

Others, again, from the special nature of their studies, are eminently qualified to advise and to direct, and to guide into proper channels philanthropic efforts otherwise liable to be wasted.

But it is of little avail for a small body of professional men to discuss *in camerâ*—for it amounts to that—reforms which they are powerless to carry out; and so it is that I venture to hope that the day may not be distant when the Royal Academy of Medicine may in its wisdom decide to open its portals wider, at least as far as its Public Health Section is concerned, and, by inviting the co-operation of those interested in public and social reforms, greatly to enlarge its sphere of usefulness, and render itself a still more important factor among the agencies which are at work for the relief of misery and suffering.

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**ART. XVIII.**—*Clinical Report of the Rotunda Lying-in Hospital for Three Years, from Oct. 1, 1893, to Oct. 31, 1896.* By WILLIAM J. SMYLY, M.D., F.R.C.P.I.; Master, Rotunda Lying-in Hospital; H. WILSON, L.R.C.S.I.; and HENRY JELLETT, M.D., M.Ch., Assistants.

DURING the three years

4,006	women	were	confined	in	the	Hospital,
6,273	„	„	„	„	„	at their own homes.

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Total, 10,279

Of the 4,006 patients delivered in the Hospital 14 died, or 0·374 per cent.

TABLE I., showing nature of Cases in Rotunda Lying-in Hospital.

—	1893-94	1894-95	1895-96	Total	—
Total number of cases	1,316	1,267	1,423	4,006	
Primiparae - -	487	430	503	1,420	1 in 2·8
Abortions - -	50	40	44	134	1 in 29·8
Hyperemesis - -	1	1	1	3	1 in 1,335
Hydramnios - -	2	3	2	7	1 in 572
Myxoma chorii - -	1	1	—	2	1 in 2,003
Face to pubes - -	3	1	17	21	1 in 191
Face - - - -	4	6	2	12	1 in 334
Brow - - - -	1	2	1	4	1 in 1001·5
Breech and lower ex- tremities - -	23	49	53	125	1 in 32
Shoulder and upper extremities - -	7	3	4	14	1 in 286
Twins - - - -	14	12	19	45	1 in 89
Triplets - - -	—	—	1	1	1 in 4,006
Prolapse of funis - -	8	4	7	19	1 in 211
Placenta prævia - -	8	14	9	31	1 in 129·5
Accidental hæmorrhage	11	5	4	20	1 in 200
Post-partum do. - -	14	18	17	49	1 in 82
Prolapse of cervix - -	1	—	—	1	1 in 4,006
Rupture of uterus - -	—	1	—	1	1 in 4,006
Labial thrombus - -	—	—	2	2	1 in 2,003
Retained placenta - -	10	10	15	35	1 in 114·5
Ovarian tumour - -	—	—	1	1	1 in 4,006
Myoma uteri - - -	1	5	2	8	1 in 500
Pelvic deformity - -	7	7	7	21	1 in 191
Induction of labour - -	3	7	3	13	1 in 308
Turning - - - -	14	16	12	42	1 in 95
Forceps - - - -	41	32	44	117	1 in 34
Perforation - - -	—	1	2	3	1 in 1,335
Cæsarean section - -	1	—	—	1	1 in 4,006
Panhysterectomy - -	1	—	—	1	1 in 4,006
Symphysiotomy - -	—	—	1	1	1 in 4,006
Eclampsia - - - -	4	1	3	8	1 in 500
Insanity - - - -	—	—	3	3	1 in 1,335
Deaths - - - -	7	6	1	14	1 in 286
Morbidity - - - -	59	69	44	172	1 in 23
Children—					
Spina bifida - -	1	—	1	2	1 in 2,003
Anencephalous - -	—	2	3	5	1 in 801
Hydrocephalous - -	2	—	2	4	1 in 1001·5

## PROLAPSE OF FUNIS.

There were 20 cases of prolapse of the funis. Two were complicated by placenta prævia, and one was the second of twins; eight children were stillborn, in three of whom the cord was pulseless when discovered, and one of these children was macerated. All the mothers recovered.

NAME	Age	Para	Date	Pres.	M.	C.	
1. M. B.	29	4	January 9, 1894	V.	R.	A.	External version ; extraction.
2. B. S.	25	5	Feb. 28,	V.	R.	A.	Combined version.
3. M. C.	30	2	March 12,	V.	R.	D.	Forceps.
4. M. B.	36	3	May 13,	Breech	R.	D.	Placenta prævia ; foot brought down.
5. M. D.	19	1	July 20,	Foot	R.	A.	Extraction.
6. B. R.	29	3	Aug. 5,	V.	R.	A.	Reposition.
7. M. B.	23	5	Sept. 9,	Breech	R.	D.	Cord pulseless ; nothing done.
8. L. C.	23	1	Sept. 24,	Breech	R.	D.	Twins: 1 vert. alive; 2nd, breech, cord pulseless.
9. A. S.	30	1	Jan. 29, 1895	V.	R.	A.	Combined version.
10. M. A. F.	40	6	March 27,	Oblique	R.	A.	Internal version.
11. C. J.	33	9	March 29,	V.	R.	D.	Do. do.
12. A. S.	36	2	May 20,	Oblique	R.	A.	Do. do.
13. M. A. B.	35	10	Dec. 28,	Breech	R.	A.	Extraction.
14. R. B.	22	2	Jan. 3, 1896	V.	R.	A.	Nothing; labour rapid.
15. J. O'D.	34	5	Feb. 14,	V.	R.	D.	Combined version.
16. J. D.	33	3	April 28,	V.	R.	D.	Cord pulseless ; nothing done.
17. K. M.	27	4	July 30,	V.	R.	A.	Nothing done; rapid delivery.
18. M. B.	35	5	July 9,	V.	R.	A.	Symphysiotomy ; version.
19. K. F.	22	1	Aug. 20,	V.	R.	D.	Cord pulseless ; nothing done.
20. M. D.	30	5	Oct. 19,	Foot	R.	A.	Slight accidental hæmorr., memb. ruptured, cord prolapsed; ex- traction.

## ABORTIONS.

There were 134 abortions, with 2 deaths. The preven-  
tive treatment of abortion was limited to rest in bed,

hydrastis canadensis for hæmorrhage, and opium for pain; no alteration was made in their beds or coverings. We did not give them cold food, nor apply cold to the vulva or hypogastrium, nor was ergot administered. We did not interfere because abortion appeared inevitable, but, unless there were special indications, the case was left to nature. When hæmorrhage was severe we found, with one exception, that the os was sufficiently dilated to remove the ovum. The plug was never employed where any portion of the ovum had escaped; in such cases we followed the same rule as in delivery at term—*i.e.*, we waited half an hour, and if the remainder were not expelled spontaneously we removed it. Thus 55 cases terminated without assistance; in 1 case the vagina was plugged in the hospital, because though hæmorrhage was severe the os would not admit a finger; and 2 were admitted with vaginal tampons. The uterus was plugged after curetting in 2 cases—once for hæmorrhage and once for putrefaction. In 5 cases the hot douche only was employed; in 8 compression of the uterus between the fingers of one hand in the vagina and those of the other upon the hypogastrium sufficed; in 11 the finger was introduced to detach portions of the ovum; and 50 were curetted.

E. H., aged twenty-seven, 5-para; admitted Oct. 1, 1894; six months pregnant. Patient, who had been sent up from the country, had suffered for a whole month from severe and repeated hæmorrhages, and had been repeatedly plugged. On admission she was in a state of profound anæmia. A plug was removed from the vagina, which was then scrubbed thoroughly with creolin lotion, and upon examination the os was found closed. During the next four days there was no hæmorrhage, and every effort was made to improve her condition. On the fifth day hæmorrhage recommenced, and two laminaria tents were introduced into the cervix, and the vagina was plugged. During the night her temperature rose to  $103.5^{\circ}$ , but in the morning had fallen to  $101.2^{\circ}$ . She then complained of labour pains, but she became exhausted and died undelivered.

A. C.,  $4\frac{1}{2}$  months pregnant; incomplete abortion; admitted with septic fever, of which she died on the twentieth day. Her case is reported under that heading.

Another case had been plugged outside. On admission her tem-

perature was  $101^{\circ}$ , and pulse 120. The tampon was immediately removed, the vagina and uterus thoroughly douched out, and the latter curetted. The next evening her temperature rose to  $103.4^{\circ}$ , but fell the following morning, and though it continued somewhat irregular it never rose again above  $101^{\circ}$ . She left the hospital against our advice on the eighth day.

#### HYPEREMESIS.

There were 3 cases of uncontrollable vomiting, all of which terminated fatally.

K. K., aged thirty-seven, 7-para, admitted from extern maternity, August 15, 1894. Patient was very emaciated, and exceedingly weak from constant and uncontrollable vomiting. It was determined to induce labour as quickly as possible, and two bougies were inserted between the membranes and uterine wall. Pains set in in six hours, the breech presenting. As soon as the os was sufficiently dilated a foot was brought down, and a premature child weighing  $4\frac{1}{2}$  lbs. extracted alive. After delivery vomiting continued, and in spite of nutrient enemata she gradually grew weaker, her temperature steadily falling from  $97^{\circ}$  at the time of the child's birth to  $95^{\circ}$  on the fourth day, when she died. The *post-mortem* showed some inflammation of the stomach, but all other organs healthy.

C. H., aged thirty, 3-para, admitted June 24, 1895, from Steevens' Hospital in a very emaciated condition, with history of constant vomiting for past six weeks. Urine highly albuminous, contained tube casts. The vomiting ceased on July 1, but she gradually became weaker. Labour set in on the 3rd, and she was delivered in a quarter of an hour, but died eighteen hours after. *Autopsy*.—Old pleuritic adhesions; dilated stomach; large white kidneys.

M. B., aged twenty-nine, 7-para, seven months pregnant, admitted October 11, 1895, with advanced kidney disease. History of constant vomiting for past five months; patient deeply jaundiced, liver enlarged, uræmic breath, no œdema, urine dark-coloured, highly albuminous, contained bile pigment. October 12.—Uræmic convulsions, gradually became comatose, and died undelivered the following morning. *Autopsy*.—Large fatty liver; large white kidneys.

## HYDRAMNIOS.

There were 7 cases of hydramnios, in 2 of which the children were anencephalic, 1 had spina bifida, and a fourth was oedematous. One patient was so enormously distended that she suffered from intense dyspnoea, which was immediately relieved by the escape of the waters.

## ABNORMAL PRESENTATIONS.

*Face to Pubes.*—Twenty-one cases were reported, but as it was not necessary to report this abnormality to the medical officers the record is not reliable.

*Face.*—Twelve cases.

*Brow.*—Four cases. Two terminated as such, one changed into a face, and the fourth was converted into a vertex. The head being freely movable above the brim, the hand was introduced and the occiput brought down. Labour was completed by the natural efforts.

*Breech and Lower Extremities* presented 125 times. Twice a leg was brought down to hasten delivery; 15 times the arms were extended above the head and had to be brought down. The posterior arm was always delivered first, and in most cases the child was rotated so as to turn the other arm into the hollow of the sacrum before it was delivered. When the delivery of the head required assistance it was generally accomplished by the Prag, Smellie's or Martin's method, most frequently by a combination of the two latter; once only were forceps applied to the after-coming head, but without success, and the child having died it was perforated. Forty-one children were stillborn, of which 12 were macerated, and 4 died in the hospital.

*Shoulder and Upper Extremities.*—Fourteen cases. All the mothers and 9 of the children survived. In 3 external, in 6 internal, and in 3 bi-polar version was performed; 1 was decapitated, and 1, a small and macerated foetus, was expelled spontaneously.

M. C., aged thirty-seven, 2-para, admitted January 16, 1894. Had been twenty hours in strong labour before admission. The child was lying obliquely with its head in the left iliac fossa, the right shoulder impacted in the pelvis, and the arm prolapsed and swollen. There was no foetal heart, and the contraction ring could

be easily felt above the foetal head. The child was decapitated with Braun's hook. The mother made a good recovery.

#### TWINS.

There were 45 twin births. The majority required no assistance. In one case the hand and non-pulsating cord prolapsed, they were replaced. The head of the other child came down, and labour terminated by the natural efforts. In another a hand and foot presented, but when the membranes ruptured a head and arm came down, and the labour terminated without difficulty. In one case forceps was applied, and in one in which there was also placenta prævia version was performed.

#### *Presentations.*

Both vertex	-	-	-	16
Vertex and breech	-	-	-	15
Breech and vertex	-	-	-	10
Face and breech	-	-	-	1
Vertex and face	-	-	-	1
Both breech	-	-	-	2
				<hr/>
				45

#### *Sexes of Children.*

Both male	-	-	-	16
„ female	-	-	-	20
Male and female	-	-	-	9
				<hr/>
				45

TRIPLETS.—One case.

#### PLACENTA PRÆVIA.

There were 31 cases of placenta prævia. Ten children were born alive, and 22 dead. All the mothers recovered. In 4 cases no treatment was required; in 5 rupture of the membranes was sufficient; in 20 a foot was brought down and delivery left to the natural efforts. In order to bring down the foot in 18 of these cases, version was necessary—in 2 external version; in 2 internal; and in 14 bi-polar version was performed. One case was delivered with forceps.

NAME	Variety	Result to Child	Presentation	Treatment
E. O. T.	Marginal	D.	Vertex	Membranes rupt.
M. K.	Do.	A.	Oblique	Internal version
E. W.	Lateral	A.	Vertex	Bi-polar do.
M. C.	Marginal	A.	Do.	Forceps
H. C.	Lateral	D. D.	Both vertex	Membranes rupt.
L. M.	Marginal	D.	Do.	Do. do.
M. K.	Central	D.	Do.	Bi-polar version
B. B.	Marginal	A.	Do.	Nil
L. S.	Marginal	A.	Do.	Nil
M. B.	Lateral	D.	Do.	Bi-polar version
M. H.	Marginal	A.	Do.	Membranes rupt.
E. R.	Do.	D.	Do.	Bi-polar version
C. R.	Do.	D.	Breech	Nil
J. D.	Lateral	D.	Vertex	Bi-polar version
J. C.	Do.	D.	Do.	Internal do.
B. McK.	Do.	D.	Do.	External do.
M. M.	Marginal	D.	Do.	Membranes rupt.
J. S.	Central	A.	Do.	Bi-polar version
M. O'B.	Do.	D.	Breech	Foot brought down
E. F.	Lateral	A.	Vertex	External version
M. B.	Do.	D.	Do.	Bi-polar do.
A. F.	Do.	D.	Do.	Do. do.
E. P.	Central	D.	Vertex	Bi-polar version
M. B.	Do.	D.	Foot	Foot brought down
L. W.	Lateral	A.	Transverse	Bi-polar version
K. H.	Marginal	D.	Vertex	Do. do.
W. O'B.	Central	D.	Do.	Do. do.
K. P.	Do.	D.	Do.	Nil
M. H.	Lateral	A.	Do.	Bi-polar version
G. O'D.	Marginal	D.	Do.	Do. do.



E. W., aged thirty, 4-para, admitted Jan. 29, 1894. She had had hæmorrhage for five days before admission, and on the 28th it was very profuse. The medical practitioner who was called in plugged the vagina and sent her into hospital. On admission she was very anæmic, pulse 130, temperature 101°. She had also constant vomiting, so that she could retain no food. Her condition was so critical that in spite of her high temperature we did not consider it advisable to remove the plug immediately, but directed our efforts to stopping the sickness and restoring her vitality. After two hours the plug was removed, the vagina disinfected, bi-polar version performed, and a foot brought down. Labour did not set in for nineteen hours. She was then rapidly delivered of a child in a state of pallid asphyxia, which was brought round by Schultze's method, and left the hospital with its mother.

M. C., aged thirty, 2-para, admitted March 2, 1894. Slight hæmorrhage from marginal placenta prævia, which ceased when the membranes were ruptured; cord prolapsed and ceased pulsating, child rapidly delivered with forceps; heart pulsating, but all efforts failed to resuscitate it.

H. C., aged thirty-one, 3-para, admitted June 23, 1894. Was sent into hospital by a doctor who had separated the placenta from the lower zone of the uterus by Barnes' method, but had not ruptured the membranes. On admission the hæmorrhage was profuse; pulse, 120; T. 99°; os somewhat larger than a shilling. The vagina having been douched with hot creolin solution, the membranes were ruptured. Hæmorrhage immediately ceased, and she was left to deliver herself. The child was dead.

There was no maternal death.

#### ACCIDENTAL HÆMORRHAGE.

There were 20 cases of accidental hæmorrhage, 8 of which were severe. In 12 cases nothing was required to check the hæmorrhage beyond a hot douche and rupture of the membranes. In 4 the vagina was plugged, in 3 version was performed, and 1 was delivered with forceps.

A. E., aged forty, admitted Nov. 2, 1894. Patient was seven months pregnant, and had suffered from severe flooding before admission. There were no labour pains, and the os would only admit the tip of one finger. The vagina having been douched with hot creolin solution was plugged with gauze and moist cotton-wool. When the plug was removed, 24 hours later, the os was

found the size of a crown piece, and during the examination it was retracted beyond the reach of the finger. The membranes were ruptured, and in a few minutes a dead child was expelled. The woman declared that she was unconscious of pain during delivery. She made a good recovery.

E. S., aged twenty-nine, 5-para, admitted Dec. 6, 1894, with severe flooding; the os was undilated, and there were no labour pains. The vagina was douched and plugged as in the former case. Pains set in in about four hours. The plug was removed and the membranes ruptured. A dead child was shortly afterwards expelled.

W. D., aged twenty-five, 4-para, admitted 18th March, 1895. In this case the hæmorrhage commenced after rupture of the membranes. Labour pains were strong, but the flooding was very profuse. She became very anæmic, with a pulse of 122. The head being well in the cavity of the pelvis and the os nearly dilated, the forceps was applied, and a dead child, weighing 9 lbs., extracted. An examination of the after-birth showed that the placenta had been situated in the upper zone of the uterus.

M. S., aged thirty, 2-para, admitted Aug. 14, 1895. Had had severe hæmorrhage before admission, and internal version had been attempted outside; the os was about the size of half-a-crown, and a foot was in the vagina, but the head was still in the brim. Version was completed by pushing up the head, and strong pains setting in a living child was born in two and a half hours.

*(To be continued.)*

#### ROENTGEN-RAYS FOR ECHINOCOCCUS.

PROFESSOR POSNER presented at the last meeting of the Berlin Medical Society a patient who, for some time before consulting a doctor last November, had been passing at intervals numbers of echinococcus-cysts in his urine. In the right hypochondriac region there was a tumour extending well down to the crest of the ilium. This gave the characteristic fluctuation of echinococcus growths, and seemed almost surely to be connected with the right kidney. A Roentgen radiogram, however, showed that the parasites really were in the liver, and operation confirmed this diagnosis. Instead of an extraperitoneal kidney operation, a coeliotomy was done and proved to be indicated by the condition.—*The Philadelphia Medical Journal*, March 12, 1898.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England.* Part I.—1895. Ditto, Part II.—1897. Presented to both Houses of Parliament.

(Continued from p. 201.)

#### [SECOND NOTICE.]

IN our first notice of these valuable Reports we referred generally to their purport, and, so far as our space permitted, dealt with the subjects of general death-rates and life-tables as treated of by Dr. Tatham. We shall now consider the other matters which Dr. Tatham deals with in his "Letters to the Registrar-General." In his first letter Dr. Tatham considers the subject of the causes of death. A table is given showing the changes in classification which were introduced in the year 1881 in conformity with the revised nomenclature of disease published by the Royal College of Physicians of London. These changes had been already referred to and explained in previous reports.

Dr. Tatham thus refers to the more important of these changes:—

"(1.) Up to the end of 1880 the deaths ascribed to R $\ddot{o}$ theln were referred in the official Tables to Measles; the former disease is now classified under the new heading 'Rubella,' or Epidemic Rose Rash. (2.) The deaths from enteric fever were formerly augmented by the inclusion of the deaths referred by certificate to infantile remittent fever, and also of the deaths under 5 years of age referred to remittent fever. The deaths from these causes are now separated from enteric fever, and included under the heading 'Remittent Fever.' (3.) The deaths from 'brain fever' used to be classed with those from simple continued fever; they are now otherwise dealt with, after special inquiry. (4.) Fibroid tumour was formerly included amongst cancerous affections; this is no longer the practice. (5.) Deaths from chronic hydrocephalus

were formerly referred to 'Tubercular Meningitis;' but under the new method of classification they are placed among diseases of the nervous system. (6.) Under the old method deaths ascribed to 'Hæmorrhage,' without further particulars, were classed to diseases of the circulatory system. Such cases are now made the subject of special inquiry, and whenever the actual cause of the hæmorrhage cannot be ascertained they are relegated to a separate heading 'Hæmorrhage' in the group of indefinite causes."

The subject of faulty death certificates is then referred to, and the measures taken by Dr. Tatham and his predecessor to remedy these faults by confidential inquiry through the certifying medical attendant. Dr. Tatham says:—

"The important character of the work achieved by this system of inquiry will be appreciated when the fact is realised that several thousand deaths have by its aid been rescued from amongst the ill-defined group of ailments, and added to definite and serviceable headings in the statistical records of this Office. Since the year 1885, 1,942 deaths have been added to diseases of the heart and circulatory system, 1,548 to malignant diseases, 1,458 to puerperal fever and other disorders of parturition, 818 to diseases of the urinary system, 458 to tubercular diseases, 248 to venereal diseases, 271 to uterine diseases, and 260 to enteric fever."

Dr. Tatham adds a table of "Balance of Gains and Loss in the Mortality from Specified Causes," the net result of the confidential inquiry system being that the authorities at Somerset House have been able to classify annually over 2,000 causes of death in their proper places, which otherwise must have gone into either the residuum of uncertain causes or been actually classified under the wrong headings.

Dr. Tatham proceeds next to analyse the causes of death in the case of zymotic diseases; his report is, on the whole, satisfactory. He says:—

"Taking together the eight causes of death which are known as the 'Common Infectious Diseases,' we find that their average mortality in 1881–90 for the most part fell considerably, as compared with the corresponding mortality in 1871–80, the only exceptions being measles and diphtheria, both of which diseases showed an increase."

This statement shows that Preventive Medicine must have achieved some triumphs during the decade.

“According to Table 5 it appears that the deaths directly ascribed to small-pox in the recent decennium were in the proportion of 45 per million persons living at all ages. The mortality from small-pox, which, in 1871–80, had shown an increase equal to 74 per million upon the mean rate of the preceding decennium, exhibited a striking decrease in the decennium ending with 1890, the fall being equal to 189 per million living, or 81 per cent. of the small-pox mortality in 1871–80. The decrease was common to all ages and to both sexes, although in varying degrees. Among children aged under five years the decline was equal to 84 per cent., and from 5–10 years to 88 per cent. At all other ages the decline, though less considerable, was yet strongly marked.

“With reference to the condition as to vaccination of the victims to small-pox, unfortunately the medical certificates furnish but meagre information. Of the 12,280 persons whose deaths were returned as due to that disease in England and Wales during the decennium under notice, 2,145 were stated to have been vaccinated, and 3,370 to have been unvaccinated, whilst with respect to the remaining 6,765, or more than half, no information was obtainable.”

In a note Dr. Tatham states that this complaint, with respect to defective information regarding the condition as to vaccination of persons dead from small-pox, does not apply to deaths in hospitals, in which cases the required information is “much more frequently obtained.” We are quite aware of the difficulty even in hospitals of obtaining information as to the previous vaccination of persons who are admitted suffering from small-pox, but when we find this information wanting in “more than half” of the recorded cases, it seems to show a serious absence of accurate inquiry among the medical attendants of these cases. Surely the certifying medical attendant would give this information if he possessed it! It is extremely satisfactory to find such a marked diminution in mortality from this disease, which, we think, may be altogether attributed to the increased efficiency in vaccination. Unfortunately we have not such a favourable account to give of *measles*, to which Dr. Tatham thus refers:—

“The average annual mortality from measles has not fluctuated greatly in the course of the last thirty years. In the decennium

last ended the rate among persons without distinction of sex or of age was 440 per million living, the same rate as that which had obtained in 1861-70 also; the rate in the intermediate decennium having been 378. As measles is mainly fatal to young children, it will be advisable, for purposes of comparison, to examine the mortality at the earlier ages. In 1881-90 the death-rate among children under five years old was 3,131 per million living at that age, against 2,568 in 1871-80, and 2,998 in the preceding decennium.\* According to these figures, therefore, it would appear that the mortality from measles among children was greater in the recent decennium than it had been in the previous ten years: and the table at foot shows that the increase of mortality extended to each of the years in the first quinquennium of life; it also shows that the disease is constantly more fatal in the second than in the first year of age. In each of these decennia the male rate at all ages was considerably higher than the female, but at ages above five years the reverse was the case almost uniformly."

This is precisely what might be expected, and measles will still continue to maintain its fatal sway over the little ones so long as ignorant and stupid parents continue to believe measles to be a mere trifle, and the phrase "only the measles among the children" continues to be a current phrase among all classes, and seems to be accepted by many sanitary authorities as a reason for not placing the disease among "dangerous infectious diseases," and not requiring its notification.

We are glad to find that during the last three decennia the annual mortality from *scarlet fever* "has fallen steadily and very considerably; the mean death-rates in the decennia ending respectively with 1870, 1880, and 1890, having been 972, 716, and 334 per million of the population at all ages.

\* *Measles*.—Death-rate per million living at each year of age under five:—

Decennia	Under 1 year	1—	2—	3—	4—	Total under 5 years
1861-70	2,737	6,243	3,236	1,730	968	2,298
1871-80	2,767	5,411	2,465	1,389	778	2,568
1881-90	3,365	6,673	2,916	1,684	1,031	3,131

It is difficult to ascertain whether this rapid decline in the registered mortality depends upon a diminished prevalence of scarlet fever, or whether the disease has assumed a milder form in recent years; the returns, however, of the London Fever Hospital and of the hospitals of the Metropolitan Asylums Board would seem to support the latter view."

We have little hesitation in saying that the disease *has* assumed—or more correctly, has been *made* to assume—"a milder form." There are few diseases where the sanitary conditions surrounding the patient seem to have more influence on the degree with which the infective material produces its effect than in scarlatina. We, therefore, believe that improved sanitation has had much to do with the diminution of the fatality of scarlet fever. The dread of scarlatina as a domestic pest has also, we believe, tended to diminish its prevalence and fatality. The dread of scarlatina is almost as marked a social feature as the toleration of measles; therefore when scarlatina appears every one's hand is turned against the plague—the cases are notified, isolated, and removed to hospital in numbers; everything in contact with the affected persons is destroyed or disinfected—these, we believe, to be the real causes of the diminished fatality and diminished virulence in the type of scarlatina. If measles received the same attention probably similar favourable results would follow in that disease as in scarlatina.

Dr. Tatham remarks, regarding the ages of those who die of scarlatina:—

"In each of the decennia dealt with the mortality from scarlet fever was higher among males than among females, both at all ages and also in the case of children under ten years old, but, among persons aged from ten years to forty-five, the female rate in each decennium appears to have been almost uniformly the highest."

The death-rates from this disease among children at the earlier ages show "that scarlet fever, like diphtheria and unlike whooping-cough, is less fatal to infants under one year of age than to those in their second, third, fourth, or fifth years; and this is so whether the facts for the earlier or for the later decennia are considered."

Regarding *diphtheria* Dr. Tatham remarks:—

“The annual rate of mortality from diphtheria, which in the two preceding decennia had fallen from 185 per million to 121, again rose to 163 per million in the decennium ending with 1890. It is during the periods of childhood and early youth that the mortality from diphtheria is especially formidable; it is relatively low at ages from fifteen to twenty years, and tends to become still lower as life advances. It is interesting to note that at all ages up to forty-five years, and especially between five and fifteen years, the mortality is uniformly higher among females than among males, whilst at ages from forty-five to seventy-five years the reverse holds good. The increase of diphtheria mortality in recent years has occurred during the earlier ages exclusively. In the last two decennia diphtheria mortality has increased among children under five years of age from 472 per million living to 690, and among children from five to ten years of age from 291 per million to 424. The 1881-90 rate from five to ten years of age was even higher than the very high rate in 1861-70.

Referring to a table concerning deaths under five years of age Dr. Tatham continues:—

“Diphtheria agrees with scarlet fever in being less fatal to infants in their first year of life than in any other year of the first five. The first year of age is the only period at which diphtheria mortality has decreased during the last decennium.

Dr. Tatham reiterates the complaint made by his predecessor concerning the confusing nature of the certificates regarding deaths from diphtheria and croup, and states the practice followed at Somerset House in classifying these doubtful cases:—

“It is the practice in this Office to class under the head of Diphtheria all deaths which are referred to ‘membranous croup;’ deaths returned as from croup simply being referred to the heading ‘Croup,’ among diseases of the respiratory system.”

Dr. Tatham notes a marked decrease in the mortality from *whooping-cough*:—

“The mortality caused directly by whooping-cough, which in the two previous decennia had been equal to 527 and 512 per million respectively, fell to 450 in the decennium under present notice. In each of the three decennia the mortality from whooping-



cough was heavier among females than among males. As in the case of measles, and for a similar reason, the relative mortality from this disease at different periods may best be ascertained by examination of the rates amongst children at the earlier ages . . . Throughout the last three decennia, with a single exception, whooping-cough mortality showed a decline in every year of age under five. In each period the mortality was highest in the first year, and decreased rapidly in each subsequent year."

Regarding "*fever*" Dr. Tatham makes the following interesting remarks:—

"The mortality from 'fever,' without distinction as to the forms of disease included under that term, was equal to 235 per million living. It was less than half of the mortality in the ten-year period ending with 1880, and hardly more than one-fourth of that in the preceding decennium, 1861–70. Since the year 1868 the three chief forms of disease in this unsatisfactory group have been separately classified in the returns of the General Register Office. Accordingly [a table] shows the mean rates for typhus, for enteric fever, and for simple or ill-defined continued fever, respectively, in each of the last two decennia. It would appear from the figures [in this table] as though the mortality from both typhus and simple continued fever had fallen in recent years even more rapidly than that from enteric fever. There is no doubt that typhus is gradually becoming extinct in England, but it is at least probable that many of the deaths formerly ascribed to 'Continued Fever' were really cases either of typhus or of enteric fever, so that the diminution of mortality from simple continued fever is, in part, only apparent. If this is the case, then the proportional decrease in enteric fever mortality must be actually greater than it appears to be from the Tables, the true rate in 1871–80 having been higher than 322 per million.

"The decrease in 'Fever' mortality has been by far the greatest among children under 5 years and among persons above 55 years of age, whilst it has been proportionally least among persons aged between 15 and 35 years.

"Enteric fever mortality appears, according to the subjoined table, to have shown a remarkably steady decline since 1875; the uncorrected rate at all ages having fallen from 374 in the quinquennial period 1871–75 to 179 in the five years ending with 1890.

"At ages under 20 years, females suffered more heavily than males during 1871–80, and also (though the excess was less

marked) during 1881-90. At ages above 20, males suffered rather more severely than females in 1871-80, and very much more so in 1881-90. In other words, the improvement in the male rates has not been commensurate with the improvement in the female rates, and this is especially noticeable among adults. May not difference of occupation or of habit have been operative here? ”

TABLE J.—*England and Wales.—Death-rates from Enteric Fever per Million living at all Ages.*

Quinquennia	Persons	Males	Females
1871-75	374	375	373
1876-80	277	281	273
1881-85	216	230	203
1885-90	179	195	164

The marked decrease in *diarrhœal diseases* is thus referred to:—

“The annual mortality from diarrhœal diseases, which had previously fallen from an average rate of 1,076 per million in 1861-70 to a rate of 935 in 1871-80, fell further and much more decidedly in the ten-year period under present review, when the mean rate did not exceed 674 per million.”

It is at the extremes of life that diseases of this class are most fatal, especially in early infancy—that is, during the first year of life. The decrease in mortality is less in proportion at this early age than at the later periods of childhood, and a table is appended to illustrate this point:—

Decennia	YEAR OF AGE					Total under 5 Years
	Under 1 year	1—	2—	3—	4—	
1861-70	19,645	6,097	1,309	525	333	5,985
1871-80	19,817	5,650	998	344	192	5,728
1881-90	16,044	3,768	601	232	145	4,346

Dr. Tatham attributes the decrease in mortality of

diarrhœal diseases mainly to sanitary improvements, but also admits that some of it is, no doubt, due to more accurate certification of deaths. "Many deaths which would in earlier days have been referred to diarrhœa without mention of its cause, are now attributed with greater precision to the actual diseases of which diarrhœa is often a symptom merely."

With regard to *puerperal fever*, Dr Tatham writes:—

"The total deaths in 1881–90 assigned to puerperal fever and other accidents of childbirth numbered 42,092, and were equal to a rate of 297 per million females living, the rates in the decennia ending with 1870 and 1880 having been 321 and 325 respectively. If, however, the mortality from these causes is expressed in relation to births (which is the only correct method) instead of to females living, it is found to differ but little from that of the two preceding decennia, the rates having been 4·69, 4·75, and 4·73 per 1,000 births, respectively. There was, however, an actual decrease of mortality in the last decennium, calculated in the ordinary way, for in consequence of the system of inquiry referred to at page xxii. nearly three thousand deaths, which in the first instance had been indefinitely certified, were added to the total deaths from puerperal fever and childbirth during that period. In this connection it is important to remember that with respect to a large number of deaths taking place during the period of childbirth, no intimation of the fact of recent delivery appears in the medical certificate."

Dr. Tatham, having disposed of the features regarding the mortality and prevalence of zymotic diseases, discusses the deaths and death-rates from *constitutional diseases*. Owing to the new classification of causes of death the mortality statistics (during the decade 1881–90) regarding constitutional diseases, *considered as a class*, cannot be compared with the previous decade, or as Dr. Tatham puts it:—

"This class of diseases, as constituted to-day, is in the aggregate but imperfectly comparable with what had been known as the constitutional class prior to 1881. Several of the diseases formerly included in that group have been excluded from our present constitutional class, which, on the other hand, now included diseases that were originally distributed otherwise."

Dr. Tatham thus deals with the mortality from malignant

disease, which has recently become such an alarming feature in our Vital Statistics :—

“The deaths referred to cancer or malignant disease, which in the two decennia immediately preceding had corresponded to annual rates of 384 and 468 respectively in each million persons living, further rose in the decennium last ended to 589. Throughout the entire period the increase has been steadily progressive from year to year. If, therefore, the correctness of the above figures be accepted without further question, it will appear that, in the course of the last twenty years, the mortality from malignant disease has increased by 53 per cent. It is only right, however, to mention that within the last six years of the recent decennium the sum of the deaths ultimately referred to cancer has been augmented by not fewer than 1,548, in consequence of the system of inquiry already referred to. These deaths had increased the rate of cancer mortality in the recent decennium by 6 per million. Moreover, the experience of the last ten years lends support to a contention advanced in the last decennial supplement, namely, that, apart from the additions just adverted to, the increase is not wholly real, but may be accounted for, to some extent, on the assumption that the true nature of obscure cases of malignant disease has been recognised with ever-increasing certainty in recent years, and that, as a consequence, the statement of death causes by medical men has been made with greater precision than had formerly been the case. The experience of 1881-90 again confirms that of the earlier decennium in showing that the increase of cancer mortality is greater among males than among females. Thus, Dr. Ogle, writing in 1885 on the increase of mortality from malignant disease in 1871-80, remarked that the rate among males had increased within twenty years by 62 per cent., whilst the rate among females had increased by 43 per cent. only. The figures now available show that if the recent decennium is contrasted with 1861-70 the increase of mortality has been as great as 78 per cent. among males, the increase among females having been 42 per cent.

“In the recent decennium the mortality from cancer among persons of both sexes was low up to the age of 25 years, and was not high until after the 35th year of life. Among males from 25 to 35 years old the mortality has increased since 1871-80 by 13 per cent., which is the lowest rate of increase observed at any period of life. Among females at the same age the rate shows, exceptionally, a decrease of one per million living. This is the

solitary instance in which even the slightest abatement is apparent in the ravages of cancer ; and even this exception will be found to conform to the rule, if the rates of the recent decennium be compared with those of 1861-70 instead of with those of 1871-80. The excess in the recent decennium, as compared with its predecessor, increases rapidly and progressively as age advances, reaching 44 per cent. for males between 55 and 75 years of age, and 30 per cent. for females over 75."

Having regard to the very large proportion of deaths which are caused by tubercular disease, especially by phthisis, it is extremely gratifying to find that mortality from diseases of this group has substantially diminished during the decennium 1881-90.

"The aggregate mortality from tubercular diseases as a group has decreased continuously throughout the last three decennia, the rates having fallen from 3,240 per million in 1861-70 to 2,420 in 1881-90 ; but, in spite of this decline, the aggregate death-toll from diseases of the tubercular group is still so heavy as to demand constant and watchful attention. On reference to Table 5 it will be seen that pulmonary consumption, the principal disease in this group, is mainly fatal during adolescence and maturity, whilst *tubercles mesenterica*, acute hydrocephalus, and the remaining forms of tuberculosis are fatal chiefly to young children. In fact, the mortality from tubercular diseases, as a group, is found to be very serious throughout the entire span of life, from infancy to old age.

"Tubercular phthisis, the most destructive member of the group, caused a mortality, in the recent decennium, equal to 1,724 per million ; these figures indicate a life saving on the rate of 1871-80 equal to 392 per million living, the life saving in 1871-80 as compared with the previous decennium having been 359 per million. In the course of the last twenty years the crude mortality from phthisis has decreased by 30 per cent. Among males the rate of decrease has been equal to 25 per cent., and among females to 35 per cent.

A table is given showing the annual mortality from phthisis by sexes, which gives very interesting results which are thus stated :—

"From the year 1851 to 1865 the phthisis rate was greater among females than among males, although the difference gradually diminished as time went on. Ever since the year 1866, however,

the mortality has been uniformly in excess, not among females as formerly, but among males; and in the last two decennia the excess of the male rate over the female rate was greater than had been the excess of the female over the male rate in the first decennium included in the table. From information obtained since 1890 it has been ascertained that a similar change in the sex incidence of phthisis mortality is still going on. As had been the case in the preceding decennium, so was it also in the ten years under present review, the mortality from phthisis showed a decline at each of the eleven age-groups in both sexes, with the single exception that in 1881-90 the rate among males over 75 years was higher by 14 per cent. than in the preceding ten years."

With respect to other forms of tubercular disease Dr. Tatham remarks:—

"The term 'Other Tubercular Diseases' includes the diseases known as *tabes mesenterica*, tubercular peritonitis, tubercular meningitis, and general tuberculosis or *scrofula*. It has before been stated that the diseases of the present group mainly affect infants and young children. Table 2 shows that among children under five years old the deaths from tubercular diseases were relatively more numerous than those referred to any other heading in the table, with the exception of respiratory diseases; tubercular diseases contributed nearly 8 per cent. to the mortality from all causes. The aggregate death-rate from these forms of disease has shown a slight decline in the course of the last three decennia, but the rate in 1881-90 appears, according to the tables, somewhat lower than, in strict accuracy, it ought to be; for, ever since the year 1881 the deaths referred to chronic hydrocephalus have been removed from the tubercular class to which they had previously belonged, and, in deference to the revised classification of the Royal College of Physicians, have been placed in the class of nervous diseases. This discrepancy, however, has not very seriously affected the calculated mortality from 'Other Tubercular Diseases.' As in the case of phthisis, the mortality from other tubercular diseases is considerably higher among males than among females."

We regret that space does not permit us to enter minutely into an analysis of the other causes of death as detailed by Dr. Tatham. We, however, note that the mortality from *diabetes mellitus* appears to have grown much heavier than formerly; diseases of the *nervous system* in the aggregate were lower; the mortality attributed to diseases of the

*organs of circulation* has steadily and rapidly increased throughout the last forty years; diseases of the *respiratory organs* have decreased somewhat. The mortality from diseases of the *digestive system* in the aggregate is slowly and steadily decreasing; diseases of the urinary system give a "rapid and progressive" increase. Deaths from violence have steadily decreased in proportion to the population, though suicides in this group show an increase.

(*To be continued.*)

*The Essentials of Experimental Physiology, for the Use of Students.* By T. G. BRODIE, M.D. London: Longmans, Green & Co. 1898. Pp. 231.

THIS work is published uniformly with the *Essentials of Histology*, by Professor Schäfer, and with Professor Halliburton's *Essentials of Chemical Physiology*. The three volumes make a technical library invaluable and truly essential for all practical workers in a physiological laboratory. The present volume begins with a description of the most commonly-used physical instruments—as batteries, induction coils, keys and commutators. This chapter is, perhaps, the least satisfactory in the volume; the reactions which are described as taking place in the galvanic cells, and the theory of the induction coil, would hardly satisfy the requirements of a physicist. The remainder of the book, which deals with physiology proper, is, however, deserving of high praise. The descriptions of the instruments, and the directions for the performance of the different experiments, leave little to desire in the way of fulness and clearness; while the physiological conclusions to be drawn from the experiments are generally stated with sufficient precision. Much of the apparatus described is apparently new, and often very ingenious and practical. The book is intended for two classes of students—an elementary class and an advanced class. The two courses are not separated as in Professor Halliburton's volume, but the elementary work is printed in larger type. It includes the use of electrical apparatus, record of muscle curves, stimulation of nerves by heat, electricity, and



mechanical and chemical influence, record of the movements of the frog's heart and the action of the vagus on it, and a study of reflex action in the frog.

The advanced work is very extensive, and includes a large number of experiments which under existing circumstances could not be performed by students. Indeed, the book seems to us to be much more adapted for the use of lecturers and demonstrators than for the use of students. Students will, however, find the descriptions of the experiments of the greatest service to them in enabling them to understand and follow their lectures and demonstrations. After the general muscle and nerve physiology, we have sections on the heart, not only of the frog but of the mammal, including simultaneous record of the auricles and ventricles. Electro-physiology is all contained in one chapter. There are chapters on blood-pressure experiments, on co-metric experiments on kidney, and the action of poisons—as digitalin and neurin—on the kidney volume and blood-pressure, experiments on the nervous regulation of respiration, on the salivary secretion in the dog, and on reflex action; while the experiments on the special senses are confined to vision, and are all contained in the last chapter.

The text is profusely illustrated with drawings of apparatus and curves, while there are two folded plates giving the record of a fatigue curve in muscle, and a blood-pressure and respiration record during asphyxia. On the whole, the work is one of great merit, and calculated to be very helpful to teachers and senior students, to all of whom we would most cordially recommend it.

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*The Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners.* Sixteenth year. Bristol: John Wright & Co. London: Simpkins, Marshall, Hamilton, Kent & Co., Ltd. 1898.

THE Medical Annual has been so long and so favourably known to our readers that it is almost unnecessary to do more than notify that the issue for this year is published. And we cannot understand why the publishers delay its appearance until the medical practitioners are submitted to



the temptation of substituting for it some other of the many annuals. We are, however, bound to acknowledge that print, paper, illustrations, and binding tell that the publishers have well and ably performed their duties, even if they are slow.

When we come to examine the literary part of the Annual we find that the present issue contains an atlas of the "Bacteria Pathogenic in Man," the beautiful illustrations of which are accompanied by a practical description of the method of isolating and examining these diseased germs, from the pen of Mr. S. G. Shattock, F.R.C.S., of the Royal College of Surgeons Museum. This contribution alone is worth the whole price of the Annual, and is one of those bold advances which gives the work a value greater than any of its rivals. Besides this departure we have another new one, in a report of the legal decisions which either affect the medical profession directly or have reference to the public health.

The rest of the volume possesses the excellences which secured approval from the profession for many years past; and we would further remark on the present issue, if it were not for the objectionable portrait pictures that deface the article on the modern treatment by stretching of Pott's caries of the spine. To depict the little patient having his spine stretched may add clearness to the letterpress, and make the matter more intelligible to the reader; but why give portraits of operators, on-lookers, and nurses. If this objectionable feature is to find a place in succeeding volumes we shall be grievously disappointed and pained. As we, with our old-fashioned ideas, understand medical writing—it is that medicine as a science may be advanced. Medical portraits with methods of treatment were introduced in the sixties by "Professor" Holloway, and gentlemen practising the science and art of medicine should leave such methods of acquiring notoriety to quacks and charlatans.

There are some good X-ray photographs and some coloured illustrations—one of the leucoma of the tongue, which beautifully shows the precancerous stage.

We notice with pleasure that the publishers contemplate bringing out a general index to the last twelve volumes.

Such a work will be very welcome to all busy practitioners, students, and those who spend their leisure amongst their books.

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*The Johns Hopkins Hospital Reports.* Volume VI. Baltimore: The Johns Hopkins Press. 1897. Pp. 414.

WE have frequently had to bring under the notice of our readers the great value of this publication. The present volume shows no falling-off in either the interest or value of its contents. The matter is divided into two parts. The first is a report on Neurology, by Dr. Henry J. Berkley, whose investigations have done so much to advance our knowledge of the anatomy and pathology of the nervous system. The second part is a report on Pathology, and includes five papers by different authors.

Dr. Berkley's report is entitled "Studies on the Lesions produced by the Action of Certain Poisons on the Cortical Nerve-cell." In an introductory chapter he gives an account of what has already been done by the chromate of silver method in the study of pathological lesions in the brain. He then gives his own results got by submitting rabbits to various poisonous agents, and studying the changes produced in the cortical nerve-cells. His observations were made by various methods, but chiefly by a modification of the chromate of silver method, in which phospho-molybdic acid is added to the silver solution. This modification allows of the entire brain being hardened in Müller's fluid, and is more certain in its results than the older methods.

The actions of acute and chronic alcohol poisoning, of serum poisoning (dog's serum injected into rabbits' vessels), acute and chronic ricin poisoning, and the toxin of experimental rabies are studied, and the results figured in a number of beautifully-executed photographs and drawings.

It would be impossible within our space to reproduce with justice the conclusions of the author, but we may say that the chief changes consist in a swelling, generally moniliform, of the dendrites with a loss of the granules or minute projections from these dendrites. Important changes were

also observed in the nuclei and nucleoli, as well as in the blood-vessels, lymphatics, and neuroglia. In an addendum to his report Dr. Berkley describes a case of asthenic bulbar paralysis with autopsy; and gives a most interesting description of the connection between the cortical nerve-cells and the fibres—association and others—with which they are in relation. He shows that the nerve-cell is insulated except at the tips of the granules, and that the nerve-fibres are insulated except just at their terminations. These terminations, which are bulbous or biscuit-shaped, come into close contiguity at certain definite points with the exposed granules, the arrangement being somewhat different in the case of the association fibres and in that of the collaterals of the axones of the psychical cells. He concludes that “the interpretation of the objective existence of the terminal apparatus of the nerve-fibres cannot be made but in one way, namely, that the impressions conveyed from external sources to central cell, and from local cell to local cell, is not accomplished by a diffusion of the excitation through the whole cortex, or even at various points along the course of the finer branches of the axones, but at single points, perfectly definite in their distribution, and that these points are situated only at the extremity of the nerve-fibre twigs, in the form of a histologically exact formation—the bulbous ending of the nerve-fibre—which in itself constitutes the only means for the carrying over of the cellular forces from axone to dendrone, and from cell to cell, and is in entire conformity with the conception of Waldeyer of the entity of the neurone, each cell standing as an unit in the nervous formation, and only in continuity with others at definite points.”

The first paper in the report on Pathology is by Dr. Thomas S. Cullen, and describes a case of puerperal sepsis due to the introduction of an elm tent into the uterus for the purpose of producing abortion. The lamellæ of the tent separated, and by the contractions of the uterus were forced into the uterine substance and caused fatal sepsis.

The second paper is on “Pregnancy in a Rudimentary Uterine Horn—Rupture, Death, Probable Migration of Ovum, and Spermatozoa.” The clinical report is by Dr. G. L. Wilkins, the pathological report by Dr. Cullen. Th

patient was 29 years of age, and had one child; she died of internal hæmorrhage in the fourth month of pregnancy, six hours after rupture of the sac. The abdomen contained four litres of blood, and a three or four months' foetus in its membranes. There was a right-horned uterus, to which a pregnant left rudimentary horn was attached by a muscular band. This pregnant horn had ruptured. The corpus luteum was on the side opposite to the pregnancy. The pedicle joining the two horns contained a canal which was closed at both ends, so that there was no communication between the two uteri. The ovum must have migrated through the abdominal cavity from the right ovary to the left Fallopian tube; and as the canal connecting the two uterine horns was closed, the spermatozoa must have passed up the right Fallopian tube, through the abdominal cavity, and down the left tube. It is interesting that in the right tube were contained cells of the placenta which must have been picked up from the abdominal cavity after the rupture.

An exhaustive review of the literature of such cases shows that they are rare, that most of them rupture between the fourth and fifth month, while some go to term. "Anatomically they differ from tubal pregnancies, in that the uterus is flexed towards the side opposite to the pregnancy; in that the pedicle of the foetal sac springs from the uterus at the internal os instead of where the tube comes off, and that the round ligament springs from the outer side of the sac instead of from the uterus. Clinically, the symptoms in tubal pregnancy and in pregnancy in the rudimentary horn where rupture has occurred are virtually the same. On examining the uterus, however, the sound reveals that in the latter case the canal is flexed at the internal os, and that the uterus deviates to the side away from the tumour. The pedicle of the sac commences at the internal os instead of at the uterine cornu, and is usually sufficiently long to allow free mobility of the pregnant rudimentary horn. The treatment consists in amputation of the pregnant rudimentary horn." This valuable paper is illustrated by three plates, and has appended to it a very complete bibliography.

The third paper, also by Dr. Cullen, is on "Adeno-myoma Uteri Diffusum Benignum." Three cases are recorded,

and figured in the plates. A very complete account of the tumour, which can usually be distinguished from ordinary myoma only after removal, is given, together with an extensive review of the literature of the subject.

The fourth paper is a large work, extending to 100 pages, by Dr. William D. Booker, entitled "A Bacteriological and Anatomical Study of the Summer Diarrhoeas of Infants." In the intestines of infants affected with summer diarrhoea the conditions for the growth of bacteria are different from those which exist in healthy, milk-fed infants. In the latter the bacteria consist mainly of two varieties, *B. lactis aerogenes*, which grows chiefly in the upper part of the small intestine, is scanty in the large intestine and in the fæces, and *B. coli communis*, which is scanty in the upper part of the intestine, increases as we descend, and occurs in enormous numbers in the large intestine and in the fæces. Beside these two constant bacteria, Escherich has isolated twelve others, which, however, are few and irregular in their occurrence and distribution. In children affected with diarrhoea the distribution of *B. lactis* and *B. coli* is much more uniform through the intestine, *B. coli* being numerous in the duodenum, and *B. lactis* in the colon and stools. And also the inconstant varieties are far more numerous than in health, and often greatly exceed in number the two constant forms.

No single micro-organism can be looked on as the specific exciter of the summer diarrhoea, but the disease must be attributed to the activity of many varieties, of which streptococcus and *Proteus vulgaris* are the most important. The former may occur in all parts of the canal from the stomach downwards, but are most abundant in the lower ileum and colon. They are peculiarly associated with ulceration, and it must be supposed that they play a part in the ulcerative process. *Proteus vulgaris* is found in the stools in a large proportion of severe cases, but seldom in those of a milder kind. The patients often show general toxic symptoms, pass watery or pasty putrid stools, but do not manifest evidence of serious inflammation of the intestine. Beside the streptococci, proteus, and the two constant bacteria, many others are found with pathogenic properties—as varieties of bacilli and spirilla.

The epithelium of the intestine appears to be the chief protection against invasion of the mucous membrane by bacteria; so long as it is intact the organisms do not penetrate. The first step in the pathological process is a lesion of the epithelium. These lesions as well as those in other parts of the body show that the bacteria exert a direct injury on the tissues in some cases, while in others it is indirectly exerted by the production of soluble poisons. Except in the case of the lungs, where bacilli and cocci are often present in great numbers in the pneumonic areas, a direct relation between the bacteria and the lesions of the solid organs can seldom be demonstrated. The lesions more commonly resemble those caused by the absorption of toxalbumins—such as necrosis of tubular epithelium and tube casts in the kidneys, hæmorrhage in the spleen, focal necrosis of lymph follicles, cirrhosis of liver.

The pathological lesions in the inflammatory forms of summer diarrhoea are serious and variable, sometimes chiefly confined to the intestine, sometimes more pronounced in other organs. When the disease passes into an inflammation of the stomach and intestine it ceases to be a local affection and becomes a general infectious disease or intoxication, in which the other organs of the body are affected by invasion of bacteria or absorption of toxic products.

A correspondence between the clinical features and the bacteriological findings and anatomical changes exist in many cases, so that three principal forms of summer diarrhoea of infancy may be distinguished, viz.—dyspeptic or non-inflammatory diarrhoea, streptococcus gastro-enteritis, and bacillary gastro-enteritis. This most valuable paper is illustrated by six plates, four of which are coloured.

The last paper, on the “Pathology of Toxalbumin Intoxication,” is by Dr. Simon Flexner. It is for the most part of an experimental character, in which the effects of diphtheritic, streptococcus, cholera, ricin, and abrin toxins are studied. The work extends to upwards of 150 pages, contains an extensive record of the literature of its subject, and is illustrated by four admirable coloured plates. The animals employed were rabbits, guinea-pigs, and mice; but besides the study of the lesions caused in them, full consideration is given

to the lesions found in men in diphtheritic and other forms of intoxications. The lesions found in the brain by Berkley, which are referred to in the early part of this notice, are part of the results of this very extensive research. It would manifestly be impossible, at the end of a long notice, to do any justice to such a work as that of Flexner by attempting to give any abstract of his results. We can only say that these results are of the highest interest and importance, and that the work is, in every respect, a most valuable contribution to pathology.

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*The Scottish Medical and Surgical Journal*. Edited by WILLIAM RUSSELL, M.D., F.R.C.P., Ed. Vol. I. With six Coloured Plates and seventy-four Illustrations in the Text. Edinburgh: William F. Clay. 1897.

ALL connected with the production of the first volume of the "*Scottish Medical and Surgical Journal*" are to be congratulated on the success of their work.

This is the first journal Scotland has possessed which professes to be National, and to represent medical work all over Scotland. The journals which have hitherto existed have been local. This has been regarded by many as unfortunate, for it was felt that Scotland, with its great medical schools and its varied activities, would be more suitably represented by a journal which contained work from all parts of the country.

A scheme on the lines indicated met with cordial approval in all quarters. A preliminary meeting was held in Edinburgh to forward the establishment of such a journal, and Glasgow, Dundee, and Aberdeen warmly, actively, and practically supported the view. Every number of the *Journal* testifies to the wealth of material that his Scotch medical brethren have placed at the disposal of the editor.

In the volume before us all the Scotch schools are represented. The first number is opened by a practical paper on the "*Management of Labour in Twin Pregnancies*," by Dr. Stephenson, of Aberdeen, in which we are glad to find honourable mention of Murphy's classic on "*Midwifery*," a book which is too little read to-day. "*Cortical Stimuli*," the



second paper, is from the pen of the well-known specialist, Dr. Clouston, and is, like all his writings, a thoughtful, well-considered, hopeful contribution, pregnant with good both to the specialist and the practitioner. He writes:—"The results of modern physiological and pathological investigations show that we must, more and more, regard that organ as a very differentiated one in the use of drugs."

"In psychiatric practice we need, above all things—1st, a perfect hypnotic; 2nd, a perfect cortical mental sedative; and 3rd, a perfect cortical mental stimulant. All of them must affect the mental and sensory areas, in their cell elements primarily, leaving the motor, organic and trophic areas unaffected by the drugs we use."

"Medical Folk-Lore" is the subject of a chatty, readable paper by Dr. Fox, in which he refers to the use of amulets; but strangely omits any reference to the use of *ossa triquetra* and pre-historic trephining, from which practice the use of amulets has been traced by M. Broca. His reference to the use of "vitriol" by Sir Kenelm Digby is slightly misleading, the chemical used was impure ferrous sulphate—"green vitriol"—a very different article from sulphuric acid.

Professor Ewart contributes a note on "Telegony," a subject which has been fruitful of controversy since the days of the Patriarchs.

Dr. Joseph Bell's "Harveian Oration" deals with progress in medical science before Harvey, during his time, and after him. It is a pleasantly written retrospect of the past; but the author does not seem to fully realise the progressive spirit of the fifteenth and sixteenth centuries. He quotes Riolanus, who, as is well known, was a reactionary, but even so, we think, from a fairly intimate acquaintance with the *opera omnia* of that French physician, that Harvey's demonstration on the dog, in London before Riolanus, stayed his opposition to the promulgation of the discovery of the circulation of the blood.

We cannot blame an ordinary man for being a reactionary amidst the vile surroundings of a Valois King. It took a Paré to resist such evil influences. The whole atmosphere of the Valois and the Medicean woman was soul-destroying. Their nature was as free from altruism and all the better



instincts of humanity as is that of a hyena. France knew no greatness until they passed away, and art, science, and literature were unknown in their courts.

Space forbids any mention even of other articles in this volume; but we may say that the 1,127 pages which it contains are all interesting and instructive, and we heartily wish our contemporary success, for no effort has been spared to secure it.

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*A Manual of Obstetric Practice.* By A. DÜHRSSSEN, M.D., Berlin. Translated by J. W. TAYLOR, F.R.C.S., and FREDERICK EDGE, M.D. London: H. K. Lewis. 8vo. Pp. 304. 1897.

ENGLISH readers owe the translators of Dührssen's Manual a debt of gratitude for bringing these little works of midwifery and gynæcology within their reach.

Unlike the majority of manuals they abound in interesting and more or less novel information.

The midwifery that we are now considering can be read with interest and profit, alike by the student, the general practitioner and the obstetric specialist. The first will find comfort in the author's direct, clear and concise descriptions. As a safe guide for practice the book can, in most instances, be thoroughly relied upon; while the great individuality of the writer and the novelty of some of his suggestions cannot fail to interest those who have given the subject their special care.

What, however, strikes us with greatest force in reading this work is the minute way in which small matters of detail are dealt with. Thus we read that the accoucheur should never use the nurse's appliances, for the reason that he cannot ensure their asepticity; that he must be able to guarantee that all instruments he himself employs are surgically clean. If a confinement should be far advanced when the accoucheur enters the room, and time for sterilising the hands be not sufficient, Leopold's suggestion is advised—namely, the wrapping the hands in two antiseptic towels, and so supporting the perinæum. With suggestions as precise as these the book abounds. To many they are

plain rudimentary principles, but the author does well in leaving nothing to individual forethought.

We are not in agreement with the assertion that *ante-partum* syringing of the vagina should be resorted to in every possible case.

Performed as here advised it is no doubt a perfectly safe proceeding, but quite unnecessary in the majority of instances. On the other hand, it cannot be viewed otherwise than as a highly dangerous proceeding should the slightest mistake occur in the complicated aseptic technique.

There is more than one fault to be found in the English translation. Thus we read that in eclampsia pneumonia may result from the swallowing of foreign matter. "Aspiration" is no doubt the word which is intended here. Again Schauta is made to say that "operations 'worsen' the prognosis." Here and there we come upon purely German words which, however, in no way mar the efficiency of the book.

We now turn to Dührssen's special suggestions, which have already made his name famous throughout the world. To him is due the introduction of air-tight tins containing sterilised iodoform gauze, and the value of these cannot be gainsaid. His method of plugging the atonic uterus with this material for atonic *post-partum* hæmorrhage is a safe and almost certain treatment, and an enormous addition to our resources, while for every other form of hæmorrhage this gauze can be used in an emergency.

But when the author recommends its employment in cases of adherent placenta with an atonic uterus in preference to manual delivery we cannot agree with him. Even in one of his own cases, where this course was adopted, we read that hæmorrhage persisted; and, in any case, the cleanly removal of the after-birth would not be a more hazardous proceeding, and infinitely preferable, from both patient's and doctor's standpoint, to that of the plug.

The author's treatment for eclampsia has received much attention, and has been adopted in not a few of the largest clinics; we are not, however, enamoured of it, and cannot believe that it will have any but a short existence.

Its main features are deep anæsthesia on the appearance

of the first fit. Then rapid delivery often involving the deep splitting of the cervix by lateral incisions. Perineal incisions also are resorted to in the event of this structure offering any serious obstruction to rapid delivery.

These several incisions are not always easily closed by suture, after the child is born, and the hæmorrhage from them is at times alarming. We have resorted to this plan on only one occasion, and are by no means satisfied that it is less harmful, or that it gives better results than other well-tried methods.

Vaginal Cæsarean section is another departure in surgery of, at all events, limited application. The author has had occasion to perform it once in a woman who had undergone vaginal fixation of the uterus, presumably by Dührssen's method, an operation that we have always considered unjustifiable.

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*The Pocket Formulary for the Treatment of Diseases in Children.* By LUDWIG FREIBERGER, M.D., Vienna; M.R.C.P., Lond.; M.R.C.S., Eng.; Clinical Assistant, Hospital for Sick Children, Great Ormond-street; Curator of the Museum, Pathologist and Registrar, Great Northern Central Hospital. London: The Rebman Publishing Company. 1898. Pp. 208.

THE author tells us that "the object of this little book is to give to the busy practitioner and the senior medical student, in a concise and handy form, all the information which may be required as regards the treatment of diseases of children by drugs."

The drugs are arranged throughout the book in alphabetical order. A brief account is given of their properties, uses, therapeutics, incompatibles, doses, antagonists and antidotes. Examples of formulæ are also included in the case of most of the entries, and ingenious suggestions are made for the correction of unpleasant tastes.

The book is neatly printed on thin paper. There are not many serious errors, but more careful proof-reading would have been desirable. "Officinal" is throughout wrongly employed to denote drugs and preparations which are included in the British Pharmacopœia—"Official" is the cor-

rect term. In a short list of errata we find—"Page 204, line 19 from above, for cajuputi read cajeputi." Needless to say, the error lies in the correction. "Acidum Arsenicosum" is repeatedly printed instead of "Acidum Arseniosum" (*cf.* pp. 22 and 100). The former title is that by which "white arsenic" is described in the German Pharmacopœia. The word "adstringent" is what one might expect to meet in a bad English translation of a German work. "Inf. camomillæ," on page 111, is presumably intended for preparation.

Taking the work as a whole, however, we are much pleased with its arrangement and contents, and it is our pleasant duty to recommend it as a reliable and convenient formulary for use in children's diseases. An appendix gives lists of preparations suitable for gargles, hypodermic or parenchymatous injections, inhalations and sprays, for nasal pharyngeal and laryngeal application, and for rectal application. Quinine might advantageously be added to the preparations suitable for gargles. It is most efficacious in all forms of bacterial sore throat, and if merely mixed with water (one grain to a wineglassful) it does not taste excessively bitter and acts topically more beneficially than if dissolved. Another omission from the list of preparations suitable for inhalations and sprays is resorcin. It makes an excellent spray combined with glycerine and peppermint water or rose water, in the proportion of 10 grains to the ounce.

A "Therapeutic Index" brings the work to a close. It consists of a list of drugs under the name of a disease or a symptom. Its value may be inferred from the entry "Scarlatina, acetanilidum, caffein, natrio-benzoicum, phenolum, vini gallici spiritus."

*The Monthly Cyclopædia of Practical Medicine and Universal Medical Journal.* Edited by CHARLES E. DE M. SAJOUS, M.D., Philadelphia. The F. A. Davis Co., Philadelphia, Pa., U.S.A. Philadelphia, January, 1898. Vol. I. New Series.

UNDER the above title our old friend the "Universal Medical Journal" enters upon a new and enlarged career. So also will its corresponding Annual of the Universal Medical

Sciences. The latter publication will no longer present excerpts from the year's literature arranged in order under a general heading, as in the previous eleven volumes of the *Annual*; but each disease will be in future described *in extenso*, and the new features connected with ætiology, pathology, treatment, and so on, which the year has brought forth, will be inserted in their respective places in the text. The volume, when completed, will include all the general diseases included in text-books on practical subjects—medicine, surgery, therapeutics, obstetrics, &c.

The companion publication of the *Annual*—the *Monthly Cyclopædia of Practical Medicine*—will consist of forty pages of matter, making up at the end of each year an additional volume of nearly 500 pages.

The “*Monthly Cyclopædia*” is subdivided into four sections. The first contains a series of reviews composed of some of the more important contributions of the year grouped in such a way as to introduce, when possible, controversial views. Such an arrangement, it was thought, would prove both instructive and readable. Each subject presented is only reviewed in part, however, and another issue may again treat the same question, but from another standpoint and with the assistance of different excerpts. The second section reviews questions thought by the editor to merit special attention, while the third contains brief reviews from the current literature which do not permit grouping, owing to their heterogeneous nature. Book reviews, &c., constitute the remainder of the new periodical, the first issue of which is now submitted.

The number before us contains a very able and instructive article from the editor's pen on the treatment of cancer by interstitial injections of alcohol.

*Introduction to Chemical Methods of Clinical Diagnosis.*

By DR. H. TAPPEINER. Translated, and with an Appendix, by E. J. MCWEENEY, M.D. London: Longmans, Green, & Co. 1898.

THE application of chemical inquiry to clinical diagnosis has long been in use to a limited extent, and no practitioner can afford to neglect its teachings.

Of recent years a great impetus has been given to its study, and a young and active school of physiological chemists have added much to our knowledge. This is especially true of the chemistry of the urine, which now covers so wide a field. Almost coincidently with the more detailed chemical investigation of the animal body has arisen the modern school of chemical microscopy, and no teacher of repute can hold his own without familiarising himself with the aims and methods of these two branches of study.

The small book under review represents an endeavour to give a succinct account of the more useful diagnostic procedures upon these lines. It is intended for use in the hospital ward and in the clinical laboratory, which has become an indispensable adjunct of a well-equipped hospital.

The translator and co-author has striven to compress within 150 pages a large amount of practical information, and we heartily congratulate him upon the success of his efforts, and predict a ready demand for the little book.

It consists of two parts. The first part is a translation from the sixth German edition of Tappeiner's admirable work. It deals mainly with the urine, but does not overlook the chemistry of the digestive tract, and of pathological fluids—transudates and exudates. In no other students' book that we know of are the urinary tests so clearly and amply explained.

The second part, modestly styled appendix, is from the pen of the translator. It is concerned with micro-biological methods of diagnosis—a department in which he is entitled to speak with authority. An excellent account is presented of the micro-chemical investigation of the blood, and the directions are so precise and clear that any one, with care, ought to be able to successfully carry out the needful examination. Similarly, the examination of sputum for tubercle bacilli is treated in minute detail. The remaining sections take up—the nasal secretion, gastric contents, fæces, urinary sediments (morphological elements), and inflammatory products. Very few inaccuracies or slips are to be found, and none which cannot be easily corrected in the second edition. We make no apology for directing the translator's attention to one or two that we noticed.

Page 47, for *creatin*, read *creatinin*, because creatin does not give Weyl's reaction with sodium nitroprusside.

Page 83, a chemical error occurs—"anhydrous acetic acid" should read "acetic anhydride." This latter compound,  $\begin{matrix} \text{C}_2\text{H}_3\text{O} \\ \text{C}_2\text{H}_3\text{O} \end{matrix} \text{>O}$ , is quite a distinct body, and it is essential for the performance of Liebermann's test for cholesterin.

Pages 57 and 81, for "Di-calcium phosphate," read "Monocalcium phosphate," and page 86, *Reus* should be *Reuss*.

In speaking (p. 56) of the common brick-dust sediment of urates in the urine, it is, we think, a pity that the quadriurate theory of Bence Jones, amplified and proved by Sir W. Roberts, is not clearly formulated.

On pages 137 and 147 are examples of inelegant and slovenly sentences, due apparently to hasty writing.

But these are minor blemishes, and we can cordially recommend this unpretending work to all practitioners and students.

*A Handbook of Medical Climatology, embodying its Principles and Therapeutic Application, with Scientific Data of the Chief Health Resorts of the World.* By S. EDWIN SOLLY, M.D., M.R.C.S.; late President of the American Climatological Association. Illustrated in Black and Colours. London: J. & A. Churchill. 1897.

"THE non-existence of a systematic treatise on medical climatology, and the fact that this subject has engaged the author's attention for thirty years, may be advanced as the reasons for the preparation of this volume." We congratulate the author on the way in which he has concluded his self-imposed task. Publishers, printers, artists, and bookbinders have all well fulfilled their respective duties in the production of the very handsome octavo of xii. and 470 pages which now lies before us. The accomplished author, who has made name and fame on the other side of the Atlantic, happens to be the son of the late Mr. Samuel Solly, of St. Thomas's Hospital, London.

The first section of this work contains excellent short

chapters on "The Principles of Medical Climatology," "Physiology," "Ethnology," "Geographical Distribution of Disease," and "Classification of Climates." In the following section (pages 71-181) the writer deals with the forms of disease which are specially influenced by climate. The great bulk of this portion of the volume is, we are very glad to see, devoted to the consideration of phthisis. The author displays science, skill, and judgment in his observations and advice. We find an interesting item on p. 141—"The statements of Drs. Von Ruck, Weber, and others, show that sanitariums in which the charges are higher and a profit is made are resorted to by the desperate rather than the hopeful cases, and the results are not so good as in the purely benevolent institutions. My own observations as to the influence of prudence upon the progress of phthisis . . . corroborates these opinions of the value of sanitariums."

As might be expected, American health resorts receive the greater part of the author's attention. But other quarters of the globe are not neglected, and Ireland has been offered a passing mite. "*Bandarem*," *Kilkee*, and *Kilrush* are mentioned as seaside resorts. *Glengarriff* and *Queenstown* are favourably noticed, and one short paragraph tells us that "among popular summer resorts with good bathing may be mentioned *Bray*, *Dundrum*, *Kingstown*, on the eastern coast; *Howth* on Dublin Bay, *Rosstrevor*, *Newcastle*, *Holywood*, and *Donaghadee*. The climate for all these places may be characterised as mild and damp." We cannot congratulate Dr. Solly on his knowledge of the geography and climate of Ireland. A special feature of the volume is afforded by the presence of a series of relief maps of the various great divisions of the globe.

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*The Eye as an Aid in General Diagnosis.* A Handbook for the Use of Students and General Practitioners. By E. H. LINNELL, M.D. Philadelphia: The Edwards and Docker Co. 1897.

IN this prepossessing octavo of 248 pages we find the cream of existing ocular symptomatology, as applied—or applicable—to the purposes of extra-orbital diagnosis. The



author has applied the skimming process with a hand evidently skilled in cuts of precision, and one accustomed to the use of the necessary instruments. We read, with sympathy, the statement of the writer that it had long seemed to him "that this subject was too much neglected by the general practitioner. The record of the pulse, temperatures, and respiration, urinary analysis, &c., are among the everyday routine methods of diagnosis, but the indications furnished by the eye are too little understood, and too often overlooked." We thoroughly agree with this observation, and can well afford to congratulate ourselves that the author has undertaken the production of the volume which lies before us, from which we have derived so much valuable information, while we congratulate him on the very thoroughly judicious and orderly method which he has pursued to the completion of his self-imposed task.

"The book has been written from the standpoint of the specialist for the student and general practitioner. It embodies the personal experience of the writer during a general practice of twenty years, and fifteen years' experience in the treatment of ocular diseases, in addition to extensive reading." Every page of the volume bears abundant evidence of the excellent combination of theory and practice which the writer has brought to bear on the subject. There are, besides, some well-selected woodcuts, a few excellent coloured plates; that opposite p. 115 is an excellent diagram of the optic nerve fibres from the occipital cortex to the eye-ball.

Like some other trans-atlantic authors, we are inclined to think that Dr. Linnell is disposed to attribute too many headaches to eye-strain as their exciting cause; but it is almost the only point in which we at all feel that the volume is not perfectly reliable in its facts and its deductions. We will not attempt to criticise individual details; and will only say, in conclusion, that every general practitioner should at once possess himself of a copy of this book. It fills—and well fills—a previously glaring gap in medical literature, and no medical man can conscientiously postpone—in the present state of our knowledge—the opportunity of availing himself of the very valuable aids to general diagnosis which its author has so carefully collected and so skilfully arranged.

## **PART III.**

### **SPECIAL REPORTS.**

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#### **REPORT ON PUBLIC HEALTH.\***

**By SIR CHARLES A. CAMERON, M.D.; D.P.H., Camb.; M.R.C.P.I.; F.I.C.; Ex-President, Hon. Dip. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee.**

#### **HEALTH OF THE ARMY.**

**THE** Report of the Army Medical Department for 1896, just issued, contains much interesting matter relating to the health of the army at home and abroad. In the Appendix there are several valuable reports dealing with hygiene, surgery, &c.

The average strength of the army in 1896 was 203,145 men, exclusive of commissioned officers. From this force the admissions into hospital were no fewer than 191,513, nearly equal to the whole number of troops. The deaths numbered 1,676, or in the ratio of 8·14 per 1,000 men. The sickness and death-rates were lower than in 1895. In the whole army, at home and abroad, there was only one case of small-pox. Enteric fever was less prevalent than the previous year, and less fatal. As compared with the mean rates for the previous years there was a decrease both in

\* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

number of cases and deaths from this disease. Unfortunately, Dublin in 1896, as in many previous years, was the station most affected by enteric fever.

The rates of mortality in the army vary considerably in different parts of the Empire. In Canada the admissions to hospitals and the deaths of soldiers per 1,000 were the lowest. The admissions were 569·1 and the deaths 3·32 per 1,000. In the order of salubrity the United Kingdom comes next to, and but a little behind, Canada, the admissions being 645·1 and the deaths 3·58 per 1,000. The following were the death-rates in 1896:—

United Kingdom	-	-	-	3·58
Gibraltar	-	-	-	4·10
Malta	-	-	-	7·93
Egypt and Cyprus	-	-	-	13·28
Canada	-	-	-	3·32
Bermuda	-	-	-	5·77
West Indies	-	-	-	6·19
South Africa and St. Helena	-	-	-	4·76
Mauritius	-	-	-	8·88
Ceylon	-	-	-	8·23
China	-	-	-	7·48
Straits Settlements	-	-	-	8·88
India	-	-	-	15·29
On Board Ship	-	-	-	4·71

The average duration of each case of sickness was 23·61 days—the shortest 17·26 days, being in China; and the longest 28·10, in Egypt and Cyprus.

The average sick time per soldier was 22·22 days. In Bermuda, which has the comparatively high death-rate of 5·77 per 1,000, the average period of sickness per soldier is only 9·83 days, whilst in the West Indies, in which the death-rate differs but little from that in Bermuda, each soldier is, on the average, 28·69 days ill. In the United Kingdom the soldier was, on the average, 14·10 days ill; in Canada, 10·38 days; in South Africa, 19·92 days; in China, 32·05 days; and in India, 34·35 days.

The death-rate in the army in Ireland was 3·45; in England and Wales, 3·59; and in Scotland, 4·25 per 1,000.

In the United Kingdom the cases of enteric fever treated

in hospitals numbered 94, and of these 22 terminated fatally. In 1895 the admissions were 137, and deaths 35. This case mortality is very high, as compared with the case mortality in the civil population. No less than 12 of the deaths occurred in Ireland, and 6 of these took place in Dublin. The cases in Dublin numbered 24 according to the Director-General's Report, but in that of Surg.-Major-General Preston (P. M. O. for Ireland) it is stated that 26 men, 1 woman, and 5 children were admitted into hospital in Dublin, and that of these 7 of the men and 2 of the children died.

The cases of diphtheria numbered 244, but only 1 death from this disease, so formidable in our cities, was recorded. Were all cases of true diphtheria? In how many of them was the diagnosis confirmed bacteriologically by the identification of Loeffler's bacillus?

The average number of commissioned officers in 1896 was 4,031. There were 1,244 admissions of officers into hospital, and 17 died. The ratio of deaths of officers per 1,000 living was very low—very little over 4·2

The death-rate in the army is low; but it must be borne in mind that "invaliding" weeds out a large number of the sickly men, who ultimately die as civilians or reserve men. Out of the 99,821 men on the home establishment in 1896, 367 died and 2,173 were invalided. The highest rate of invaliding was in the Foot Guards and the lowest in the Royal Engineers.

It would appear that a very large proportion of the youths who are anxious to become warriors have not the necessary physique to justify their admission into the army. In 1896 the number of recruits inspected was 54,574. Of these no fewer than 22,698 were rejected at once upon medical inspection, and 419 were found unfit within three months of enlistment. 42·3 per cent. of the recruits were found to be unfit for the army, by reason of deficient height, chest measurement, or weight, malformations, excessive loss of teeth, &c. It seems odd that giants should be refused admission to the army, but the statistics show that 41 recruits were rejected for "being" over height. For the opposite disability, under height, 1,570 were rejected. The highest ratio of rejection was on account of chest measure-

ment, 3·6 per cent. only were rejected from deficient height, whilst 4·7 per cent. were disqualified by reason of defective vision. It is strange that, in the case of boys and young men, the decay of teeth was so great as to cause the rejection of 19·75 per 1·000.

As regards age at enlistment, only 39 per cent. were over 20, whilst 43 per cent. were from 18 to 19 years of age. As the service in the army is for so short a time, the average age of soldiers must be that of very early manhood.

Some interesting statistics as regards the height of recruits are given. Dealing only with those finally approved of, we find that 3·95 per cent. were under 5 feet 3 inches. They were nearly all boys under 18 years of age. There were boys under 17 at all heights up to 5 feet 10 inches; whilst in every 10,000 recruits there were 29 boys whose height was from 5 feet 9 inches to 5 feet 10 inches, not one boy of greater height was found in the 54,574 recruits. Only 1 in 100 was 6 feet and upwards. The average height of the approved recruits, excluding boys under 17 years of age, was 5 feet  $5\frac{6}{10}$  inches, and their average age 19·3 years.

Considerable space is devoted to the subjects of sickness and mortality of the troops in Colonial stations. The average number of troops serving in India was 70,484, exclusive of commissioned officers. From these troops the admissions to hospital numbered 97,738, and amongst them there were 10·78 deaths; 1,966 were invalided and sent home. On the average, nearly one-tenth of the soldiers were constantly sick. Every soldier was, on the average, 34·35 days ill, and the average duration of each case of illness was 24·77 days. The deaths from all causes were in the ratio of 15·29 per 1,000 living—a high death-rate, seeing that soldiers are at the most viable ages.

Enteric fever is the most serious of disease affecting our troops in India. In 1896 it caused 1,795 admissions to hospital, and 445 men succumbed to the disease—a ratio of 6·31 per 1,000 men. In India rather more than one-fourth of the patients affected by this formidable disease die from it. Enteric fever is more prevalent in Dublin than in any large town in the United Kingdom except Belfast, yet the death-rate from this disease is twelve times greater amongst the

European troops in India than it is amongst the population of Dublin. The disease is widely spread throughout India—not one of many military districts being exempt from it. In the Allahabad district it caused a mortality of 17·65 per 1,000 in 1896. At Quetta, where there was much enteric fever, the organisms, supposed to be the *materies morbi* of the disease, were detected by bacteriological methods in soda water!

In some cases cresses, grown in water “liable to pollution,” were believed to have contained the *Bacillus typhosus*. The garrison of Mhow was supplied with water from the Bircha lake, 5 miles distant. The cases of enteric fever being numerous, the water was examined and the “entire bacillus” was found in it—in the lake water and in “all the taps.” The well water in the town was examined and found to be free from the dreadful organisms. It is rarely in England that the microbe of enteric fever has been detected in water, which there was the strongest reason to believe had caused an outbreak of enteric fever.

The Official Bacteriologist (Professor Hankin) reported that he had detected the bacillus in the water sent to him from the Lucknow waterworks.

There is a certain *Micrococcus Ghadialli*—so-called in honour of its discoverer, Dr. Ghadially, a native assistant in Professor Hankin's laboratory at Agra. It is harmless to man, but is antagonistic to the *Bacillus typhosus*. The curious experiment was tried of introducing this micrococcus into the water in a swimming tank which was found to be infected with the enteric microbe. In four days the enteric microbes had disappeared. The experiment was repeated in the water supply of the fort, and of the whole cantonment, with the result of an immediate and great falling off in the cases of enteric fever.

For the purification of water permanganate of potassium seems to be in general use in India, and, it is said, with very satisfactory results.

Our soldiers in India suffer terribly from venereal diseases. For some years past one man out of every two (in round numbers) is admitted to hospital affected with some form of venereal disease—syphilis and gonorrhoea are about equally

prevalent. At Madras the admissions from these diseases were in the ratio of 739 per 1,000 men. It is terrible to reflect on the amount of syphilitic poison our young and mostly unmarried soldiers import into the United Kingdom from India. How much of this poison will circulate in the blood of unborn generations?

#### SOME MORTAL AND VITAL STATISTICS OF PARIS.

The population of France increases very slowly. The births amongst the French do not exceed the deaths; and the trifling increase of population seems to be due partly to excess of immigration over emigration, partly to excess of births over deaths in the foreign population domiciled in France. Although the population of France is nearly stationary, that of Paris is steadily increasing, though not so rapidly as that of most of the great European capitals. In 1896 it amounted to 2,514,995, and in 1897 to 2,529,405. The increase of population appears to be due to a decrease in the death-rate rather than to an increase in the birth-rate. In 1888 there were 59,373 births and 50,825 deaths recorded; whilst in 1897, although the population had considerably increased, the births were fewer (59,353), whilst the deaths were 46,804.

The deaths from zymotic diseases show a marked decline, no doubt in great part owing to the many sanitary reforms carried out of late years in the gay capital. The following were the numbers of deaths from zymotic maladies in and since 1888:—1888, 4,029; 1889, 4,531; 1890, 4,341; 1891, 3,245; 1892, 3,541; 1893, 3,225; 1894, 3,196; 1895, 1,863; 1896, 1,905; 1897, 1,681.

Phthisis shows no sign of decrease, the deaths from this disease averaging about 10,000 per annum, or nearly one-fourth of the deaths from all causes.

In 1896 the death rate was 19·32 per 1,000 persons living, and in 1897 18·5 per 1,000. Paris, if it progresses at this rate, will rival London in salubrity.

In 1897 the minimal temperature of Paris was 19·8° F. (on the 26th December), and the maximal 103·8° F. (on the 25th June).

## THE GROWTH OF BACILLI IN SOILS.

The influence of soils on the distribution of enteric fever has frequently been treated of in this journal. That the disease, so far as Dublin is concerned, is more prevalent on gravels than on clay has been clearly established. In former reports the opinion has been expressed that emanations from the soil may, as well as infected water, milk, &c., or sewer gases, convey the infective matter of enteric fever. There is abundant proof that the typhoid bacilli can exist for a long time in soil, but whether or not they retain their pathological activity in the soil has not been made the subject of much investigation. In the supplement to the Twenty-sixth Annual Report of the (English) Local Government Board (for 1896-97), there is an interesting report on the growth of typhoid bacilli. The report, though stated to be a preliminary one, is full of interest, and we are indebted for it to that able investigator, Dr. Sidney Martin, F.R.S. The typhoid microbe is both aërobic and anaërobic; it can even be developed in an atmosphere of carbonic acid. Although like other bacilli it prefers a temperature of 37° C., it can stand extremes of temperature, and can survive at temperatures lower even than 0° C. It grows both in acid and alkaline media, and doses of carbolic acid, fatal to most kinds of micro-organisms, do not destroy the typhoid bacillus. The practice of adding a little carbolic acid to the dejections of enteric patients is wholly useless—enormous doses must be used to destroy the microbe.

Dr. Martin sterilised a soil containing a large quantity of organic matter. It was treated with distilled water until it became moist. The soil was then inoculated with a broth culture of the bacillus of twenty-four hours' growth. The infective matter was placed in the centre of the soil, which was contained in Erlenmeyer flasks. At the expiration of sixteen days the soil was examined for the presence of the bacillus, and with the following intensely interesting results:—The bacilli were found to be very numerous and active, not only in the soil in the centre of the flask, but at the sides of the flask, 1½ inches from the centre. They had multiplied and had ramified throughout the mass of soil. It should be mentioned that the percentage of



water in the soil was 35·1, and that there was no liquid on the surface of the soil. The organisms were, therefore, not carried through the soil by water.

Another soil of different origin, but containing much organic matter, was similarly treated. The microbes were found to be numerous and active in the central part, but they had not spread towards the sides of the flask. This soil contained 40·3 per cent. of water.

The next experiments were made with an *agar* culture of four days old, and a soil containing 38·7 per cent. of water. In sixteen days long and short active rods were obtained from the centre and one side of the flask, but in the two other sides no bacilli were detected. It is possible, however, that the negative results were due to pitting of the surface by the water added to it.

In a second experiment with the *agar* cultivation, in another soil, the bacilli were found in the centre and surface of the soil. Why did this experiment give somewhat different results from the other with the *agar* culture? Probably owing to difference in the composition of the soils.

Further experiments proved that the bacilli introduced into soils were alive after 79 days, and in 105 days they had pervaded the whole of the soil. Experiments were made to ascertain whether or not the bacilli retained after 105 days their vegetative and cultural peculiarities. The results proved that the soil was capable of sustaining perfectly the multiplication of the bacilli as if it were a culture medium.

Experiments with *Bacillus coli communis* gave similar results.

Most interesting of all were the experiments with infected soils. Kept at the temperature of the air, at the end of 63 days the bacilli were not only alive, but had begun to pervade the soil. The bacilli multiply and diffuse more rapidly at high temperatures, as might be expected; but it is clear that the soil at its ordinary temperature can, if it contains organic matter, sustain the life and increase the growth of typhoid bacilli.

The final experiments of Dr. Martin were made with virgin soil, at 37° C. The results were negative, both as regards cultivation of the typhoid bacillus and the *Bacillus coli com-*

*munis*. A repetition of this experiment is required before we can safely assume that these bacilli cannot live in a virgin soil. There still remains to be determined the question—How long can these microbes survive in contaminated soils? It is of much more practical interest to have the experiments conducted at ordinary temperatures than at 37° C., which does not occur in the soils of these countries. At present it is established that, in a soil containing offensive organic matter, typhoid bacilli can exist and multiply during 105 days. It would seem likely that their existence for a much longer period is determined only by the quantity of pabulum for them available in the soil. We await the publication of Dr. Martin's further researches with much interest.

#### THE BEHAVIOUR OF THE TYPHOID BACILLUS IN MILK.

In the Supplement to the Report of the Local Government Board already referred to, Dr. Edmund Cautley gives the results of his experiments as regards the behaviour of typhoid bacilli when introduced into milk. He finds that the microbes, if introduced into milk, will exist alive in it for several days. They do not, however, multiply, but rather decrease. The souring of the milk does not kill them, for we know that they can exist in the presence of much stronger acids than lactic or butyric. How long they can live in milk has not been determined, but the time seems to be influenced by the character and number of the other micro-organisms in milk. Few liquids seem to be so well provided with organisms as milk. In 1 centimetre of a sample no fewer than 8,119,200 have been detected.

As the typhoid bacillus can exist in very sour milk, there is reason to believe that it may survive in the casein of milk when it is converted into cheese. Dr. Lydia Rabonowitsch sought for the bacillus tuberculosis in 80 specimens of butter with negative results. She points out that in the investigation of milk products there is danger in confounding acid resisting bacteria with the tubercle bacillus, as she thinks has been the case.—*Zeitschrift für Hygiene*. Vol. XXVI., No. 1, 1898.

#### MICROBE OF WHOOPING-COUGH.

Czaplewski and Hensel have examined the sputa in thirty cases of whooping-cough, during an epidemic of that disease

in Königsberg. In every instance they detected in the solid constituents of the sputa a peculiar micro-organism. They were able to isolate it, and put it under "cultivation." The organism is a short bacillus with round edges. It resembled the bacillus associated with influenza, but it differs from the latter in being cultivatable in ordinary media. Stained with aniline dyes, it was immobile. Its size varied according to the stage of the disease. Few were found in the earlier stages of the disease, but, later on, they were largely developed, and appeared to be more numerous when the malady was severe.

The inoculation of animals with the "culture of the bacillus gave negative results." Still the authors believe that this micro-organism is the exciting cause of whooping-cough, from the fact that it is always present in the expectoration of the patients. A coryza, accompanied by spasmodic cough, seized the authors whilst they were making their observations, but the attack did not last long.

The description of the bacillus accords with that of a microbe investigated by Burger, but it differs from the account of the depo-coccus described by Ritter, and from that of a bacillus discovered by Dr. Afanassieff, and which were associated with whooping-cough by those authorities.

Czaplewski and Hensel's investigations are described fully in the *Deutsche medicinische Wochenschrift*, No. 37, 1897.

#### DISINFECTION BY FORMALIN.

Some years ago chlorine was the almost universal agent employed in the disinfection of rooms which had been occupied by fever patients. It was, to a large extent, superseded by sulphur dioxide. This gas in its turn gave way to the system of spraying the atmosphere of the infected rooms and its walls and ceilings with solution of mercuric chloride, 1 part of the salt per 1,000 parts of water. Many authors contended that various kinds of pathogenic organisms were not killed by the doses of sulphur dioxide usually employed, and that nothing but prolonged exposure to air containing a very large percentage of sulphur dioxide would suffice to destroy the virulence of malignant micro-organisms. Quite recently the claims of sulphur dioxide as a germicide have

been revived, and the results of some recent investigations seem to show that its powers have been under-estimated.

One most recently employed disinfectant is *formalin*. This article is a 40 per cent. solution of formic aldehyde ( $\text{CH}_2\text{O}$ ), a derivative of methylic alcohol or wood spirit. Dr. Henry Kenwood, Assistant Professor of Public Health, University College, London, read a paper on "Disinfection by Formic Aldehyde" at the recent Sanitary Congress at Leeds. He rather decries the spraying method, and speaks most favourably of the use of formalin. Rosenberg, Roux and Trillat, Bardet and Trillat, Kinyoun, Nicolle, Giornale, Herbert, Andersen, and many other bacteriologists and sanitarians have recently published the results of experiments with formalin, highly favourable as to its disinfecting power.

Dry formalin may be used instead of a solution. It may be procured in tablets of one gramme in weight. The tablets are vaporised by the heat of a specially constructed lamp applied to a vessel (autoclave), of which there are several varieties. For large spaces Trillat's autoclave is the best. For ordinary-sized rooms a smaller one, costing about ten shillings, is sufficient.

One great advantage of the use of formalin is, that it is not necessary to re-paper or re-whitewash the rooms after disinfection. The furniture need not be removed.

The apparatus used may be employed to produce the aldehyde from common wood spirit, by covering the spirit and causing it, mixed with atmospheric air, to pass over red hot platinum.

The tablets are, however, more convenient, and require a very simple apparatus. Dr. Kenwood considers that the evidence in favour of formic aldehyde justifies the following conclusions:—

"(1) That when the atmosphere is charged with less than 1 per cent. of the vapour, the disinfection of all surfaces is complete and rapid, and that this holds good under the ordinary conditions of temperature and moisture obtaining in living rooms.

"(2) That the vapours possess a certain and variable amount of penetrating power into loose fabrics, especially when these are dry. This penetration is largely due to the circumstance that when produced in a warm state the vapour is of a low specific gravity and mixes well with the air.

“ [These facts have been proved by numerous experiments by different workers, in which the following objects were exposed:— The specific organisms of cholera, enteric fever, diphtheria, tetanus, tuberculosis; *B. coli communis*, *B. anthracis* with spores, *Trichophyton* spores, *Staph. pyogen. aureus*, phthisical sputum, dust, soil, &c.]

“(3) That the vapours do not affect the colours of textile materials, &c., or (with the exception of iron or steel) metallic surfaces.

“(4) That the room, and articles exposed, can be cleaned of the vapours readily by aëration, and the vapours are not so irritating but one can always enter the room and unseal at the first attempt (an advantage over  $\text{SO}_2$  and  $\text{Cl}_2$ ).

“(5) That the disinfecting properties of the aldehyde are greater than those of  $\text{SO}_2$  or  $\text{Cl}_2$ .

“(6) That there is no danger in entering the room, either from the aldehyde, or from the  $\text{CO}$  which is formed at the same time. This is proved from the fact that the men employed in the works and exposed to considerable quantities enjoy good health, and also from many experiments with animals in atmospheres heavily charged with the vapours generated as in room disinfection.”

My own experiments with formalin as a disinfecting agent have given satisfactory results, and I am disposed to think this agent will soon supersede all others. Dr. Kenwood's results are very convincing, as will be seen by the following:—

“ EXPERIMENT I.—After the due exposure the inoculated swabs and strips were returned to the laboratory as rapidly as possible, and were rubbed into fresh serum tubes which were incubated over night at  $37^\circ \text{C}$ . After nineteen hours, the following results were obtained:—

“ 1. From all the control swabs and strips, including those covered by the circular discs of holland, the diphtheria bacillus was found to have grown readily; some of the growths were practically pure, others were mixed with cocci, chiefly staphylococci.

“ 2. Of the test swabs exposed to formalin vapour, and the strips, including those covered by discs of holland, similarly exposed to formalin, not a single tube inoculated from the vaporised swabs and strips showed any diphtheria colonies, and only one strip gave rise to any culture at all—viz., a staphylococcus colony (verified by the microscope). This may have crept in after the formalin vapour had ceased to act, before the petri dish cover was replaced, or perhaps during the transfer of the strip, in the laboratory, from the petri dish to the fresh serum tube.

[N.B.—In this experiment Trillat's apparatus was employed in a room of 2,004 cubic feet capacity. The vapours of  $\text{CHOH}$  were allowed to escape into the room for forty minutes; after this an exposure of three hours was allowed. The subcultures were placed on the floor, on chairs, on the mantelpiece, and on brackets, one of which was fixed just below the ceiling. At the end of three hours the atmosphere had a strong odour of  $\text{CHOH}$ . Many coloured materials were exposed (including terra-cotta plush, pale peacock-blue silk, sage-green silk, French-grey face cloth, butchers'-blue cotton, electric-blue cotton, yellow and orange velveteen, dark green plushette, &c.), and control pieces were reserved for purposes of comparison. It was impossible to detect the slightest evidence of fading. Bronze images and gilded frames were quite unaffected.—H. K.]

“EXPERIMENT II.—Results after  $20\frac{1}{2}$  hours' inoculation of fresh serum tubes at  $37^{\circ}\text{C}$  :—

“1. From cultivations made from the control swabs and strips of holland, the diphtheria bacilli were readily recovered in all cases.

“2. In the case of the test swabs, the single squares of holland, and the strips inoculated and covered with circular discs of holland, the serums remained sterile for days afterwards.

“[N.B.—In this experiment twenty-one paraform tablets (dry formalin), of an average weight of about a gramme, were employed to disinfect the room of 2,004 cubic feet, and the period of exposure was four hours. On unsealing the room the atmosphere had a strong odour of the aldehyde.—H. K.]

“EXPERIMENT III.—Results :—

“1. From the control swabs and strips of brown holland cultivations on serum were made, and the diphtheria bacillus was easily recovered from all the cultures.

“2. From the test swabs and strips of holland (both single strips and those covered by sterile discs of the same material) an attempt to make cultivations of diphtheria bacillus on serum failed in all cases.

“[N.B.—In this experiment the lamp which I had made for me was employed;  $1\frac{1}{2}$  litre of methyl alcohol was used up and the room (2,004 cubic feet) sealed for four hours. At the end of four hours the atmosphere had a strong odour of the aldehyde.—H. K.]

“EXPERIMENT IV.—Results after inoculation of fresh serum tubes :—

“1. From cultures made from the control swabs and strips of holland the diphtheria bacilli were really obtainable in all cases.

“2. The serums inoculated with the test swabs showed colonies of

diphtheria in two out of three cases—one of the three remaining sterile.

“3. The serums inoculated with the test single strips of holland also showed colonies of diphtheria bacilli mixed with staphylococci in two out of three cases—one serum, however, remaining sterile.

“4. The serums inoculated with the three strips of holland which had been covered with circular discs of holland, curiously enough remained absolutely sterile after 72 hours' incubation at 37° C.”

In conclusion, we should point out that Mr. Wolf Defries, in *Public Health* for March, 1898, whilst admitting the great power of formic aldehyde when applied to unprotected surfaces, believes that its power of penetration is not nearly so great as that of high-pressure steam. The steam appears to be the best agent for disinfection of clothing, &c., in close vessels, but it is inapplicable in the cases of room disinfection. He is by no means singular in favouring this system above all others.

#### THE HEALTH OF BOMBAY.

BRIGADE-SURGEON LIEUTENANT-COLONEL THOMAS STEPHENSON WEIR, I.M.S., Bombay, has sent us from the Health Office, Bombay, the following Table, showing the total mortality in that city in January and February, 1897 and 1898:—

Week ending	1897		Week ending	1898	
	Total Deaths	Increase or Decrease per cent.		Total Deaths	Increase or Decrease per cent.
January 5	1711	— 7·66	January 4	1061	+ 8·82
„ 12	1638	— 4·26	„ 11	1307	+ 23·18
„ 19	1758	+ 7·32	„ 18	1540	+ 17·82
„ 26	1721	— 2·10	„ 25	1726	+ 12·07
February 2	1645	— 4·41	February 1	1871	+ 8·40
„ 9	1911	+ 16·17	„ 8	2067	+ 10·47
„ 16	1728	— 9·57	„ 15	2195	+ 6·19
„ 23	1650	— 4·51	„ 22	1974	— 10·06
March 2	1484	— 10·06	March 1	2080	+ 5·36

## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### ROYAL ACADEMY OF MEDICINE IN IRELAND.

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President—EDWARD H. BENNETT, M.D., F.R.C.S.I.  
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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#### SECTION OF OBSTETRICS.

President—F. W. KIDD, M.D.  
Sectional Secretary—JOHN H. GLENN, M.D.

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*Friday, January 7, 1898.*

The PRESIDENT in the Chair.

#### *Specimens.*

DR. ALFRED J. SMITH showed a large fibro-myoma with uterus and appendages removed by cœliotomy on December 14th, 1897, from an unmarried woman, aged thirty-six. The patient noticed for the past seven or eight years a lump in her abdomen, which increased in size during menstruation; it caused little or no inconvenience up to two years ago when it suddenly got much larger and became painful to the touch. Menstruation ceased eighteen months ago.

*Examination before Operation.*—A large, solid mass the size of a seven months pregnant uterus filled the central portion of the abdominal cavity; it was movable upwards and could touch ribs on right side; it did not sink into the pelvis, as there was a clear margin about two fingers' width above the pelvis, which was quite clear on percussion.

*Bimanual under Ether.*—Cervix pointed downwards and forwards. Fundus, small posterior. Left ovary enlarged in front; right low down. Sound passed 5 c.m. Traction on cervix with volsella demonstrated no connection with tumour.



*Diagnosis.*—From facts stated above the tumour did not appear to be uterine. Every possible variety of tumour was suggested as a probable solution of the difficulty.

*Abdominal Section.*—Extensive incision was made; tumour was easily drawn out of abdomen, and in making tension on it to determine the pedicle, Dr. Smith was astonished to find ovaries and tubes coming out along with it. The pedicle was twisted loosely, it was quite translucent when untwisted, and contained no solid portion. A chain suture was introduced and tumour removed. On examining pelvis a solid mass occupying the position of the uterus was felt.

*Specimen* consists of a large fibro-myoma growing from the fundus of the uterus. The uterus consists of the fundus and supravaginal portion of cervix, with hypertrophied and elongated tubes and ovaries attached. An amputation had taken place sometime previously through the junction of the supravaginal portion of the cervix and the portio media. There was no accumulation of fluid in the uterine cavity, or any peritoneal adhesions. The case is interesting as demonstrating the difficulties of diagnosing abdominal tumours, and to explain how the amputation took place. The twisting of the pedicle was certainly not sufficient. Recovery uneventful.

DR. SMITH also exhibited a large fibro-myoma of the uterus removed by cœliotomy. Recovery.

DR. R. D. PUREFOY.—(a) Myomatous uterus removed by cœliotomy; (b) Sub-peritoneal myoma removed by cœliotomy.

*The Action of the Vaginal Plug in Accidental Hæmorrhage.*

DR. HASTINGS TWEEDY read a paper on the action of the vaginal tampon in accidental hæmorrhage. He contended that when this was properly applied it directly compressed the uterine arteries, acting on them as does a tourniquet. A well-fitting plug should, in the first instance, fix the cervix by completely surrounding it with pledgets of moist cotton wool packed as tightly as possible, and should then fill the vagina to its utmost capacity, direct compression thereby being exercised on the uterine arteries. The obstruction to the circulation thus brought about causes moreover an accumulation of carbonic acid gas in the uterine muscles, which is a well-known and powerful stimulant to uterine contractions. He adduced arguments in favour of these theories founded on (1) observations made on the pregnant cadaver; (2) the analogy of Doyen's hysterectomy, where a steady down drag exerted on the cervix causes this operation to be bloodless; and (3) results

obtained in practice—where, as in one instance, hæmorrhage was arrested in spite of a large intravenous saline injection, and in a time too short to permit of any other explanation as to the plug's action.

DR. WINIFRED DICKSON said that accidental hæmorrhage had always seemed to her to be the very worst complication in midwifery. Why did he (Dr. Tweedy) think it better not to use the speculum? She thought that the plug ought to be sterilised. Did he plug with balls of cotton wool, and did he attach strings to them in order to facilitate their removal?

DR. MACAN thought that accidental hæmorrhage was amongst the most difficult of the accidents of parturition to treat. He could recall several cases where Dr. Tweedy's treatment might have been of service, if it was as serviceable as he (Dr. Tweedy) hoped it to be, but he (Dr. Macan) wanted proof of the statement that the uterine arteries are stopped by the process of plugging. As far as internal accidental hæmorrhage goes, before total detachment of the placenta, his method stopped the uterine arteries, and his treatment in these cases was most favourable. Plugging might be carried out as long as the membranes were perfect, but, after their rupture, there was no means of increasing the intra-uterine tension. So far, he (Dr. Macan) preferred to introduce a Barnes's bag in preference to plugging the vagina; also, in placenta prævia, where the bleeding surfaces were quite close, he preferred to use a Barnes's bag. He did not understand how Dr. Tweedy's method could twist the arteries very much, nor how the accumulation of carbonic dioxide could take place.

DR. ALFRED J. SMITH said that he did not understand how a vaginal plug would so act as to compress the uterine arteries. Dr. Tweedy wanted them, he thought, to believe that his method was different from the method adopted in hospitals. To his mind the great difficulty in dealing with such cases was not in cases where labour had started at all, but in cases of concealed hæmorrhage, where the patient was collapsed and almost pulseless, with no labour pains, cervix quite hard, and where there was a pathological condition of the uterine muscular fibres. He thought that the best treatment in grave cases would be to ligature the uterine arteries direct, and the uterus could be then removed. Death from accidental hæmorrhage generally occurred after delivery, up to two hours after parturition.

DR. DOYLE considered that unless an artery was atheromatous very little pressure would stop it.

DR. R. D. PUREFOY said that the practice in the Rotunda

Hospital in such cases was to plug, and that accumulating evidence was distinctly in favour of continuing the practice. He thought that such subsidiary means as the use of a firm binder should not be forgotten, and also the stimulation of the uterine contractions by the careful manipulations of both hands.

DR. KNOTT also spoke,

DR. TWEEDY, replying, said in answer to Dr. Dickson that he always used sterilised cotton wool. A much greater quantity of wool could be pressed into the vagina without a speculum. He did not employ strings, as by so doing he did not see how so tight a plug could be made with strings as without, and there was no difficulty in removing the pieces of cotton wool. Dr. Macan had said that he (Dr. Tweedy) had not adduced any evidence to show that the circulation was impeded. He (Dr. Tweedy) said that in one of the cases which he had been able to study he was easily able to bend the whole broad ligament by pressing in the lateral fornices and pulling down the cervix, and was able to tighten the lower portion of the broad ligament against the upper portion. A branch of the uterine artery ran to the cervix before the uterine artery entered the uterus, and if the cervix were pulled upon, and a plug placed outside the branch, the uterine artery must receive a sharp bend at the plug.

The Section then adjourned.

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*Friday, February 11, 1898.*

The PRESIDENT in the Chair.

*Exhibits.*

DR. ALFRED SMITH exhibited a pregnant uterus, showing foetus *in situ*, with large fibromyoma, removed by Porro's operation.

DR. KIDD exhibited a papillomatous ovarian cystoma, removed by abdominal section.

DR. JELLETT exhibited a subserous myoma uteri, removed by myomectomy.

*Vaginal Colpotomy; its Advantages and Limitations.*

DR. T. HENRY WILSON read a paper on this subject, and confined his remarks to the treatment of pelvic tumours and adhesions, discussed the advantages of both anterior and posterior colpotomy, and, contrasting them, claimed that both are valuable, but each individual case must be judged on its merits.

Having described the method of anterior colpotomy, he pointed out the facility with which the adnexa may be drawn down and examined, adhesions of the ovaries separated, and tubes and ovaries removed, or, if found healthy, replaced. Small subperitoneal myomata, if pedunculated, may be ligated, or if sessile, incised, removed, and the peritoneum closed over. Small ovarian and parovarian cystomata may likewise be easily treated, or if too large the contents may first be evacuated, the pedicle tied, and the cyst removed.

He expressed his disapproval of the operation of vaginal fixation for retroversion, except in cases past the child-bearing period, or for the control of hæmorrhage impossible by other means. He then dwelt specially on the treatment of pyosalpinx by this method, and laid stress upon the usual site of rupture of the pus sac when separating adhesions—namely, the posterior surface, which is the most unfavourable situation in operating by coeliotomy, but favourable when by vaginal colpotomy. He strongly advocated removal of the uterus in severe cases of pyosalpinx with dense adhesions of long standing.

Having described the operation of posterior colpotomy, he discussed the question of pelvic hæmatocele and pelvic abscess, pointing out the great advantage this method presented for efficient drainage. Densely adherent ovaries deeply situated in Douglas' pouch he regarded as suitable for the posterior operation, but he deprecated treatment of ruptured tubal pregnancy by the vaginal method. Two difficulties in colpotomy were emphasised—viz., rendering the vagina aseptic and reaching the peritoneum. He also drew attention to the ever-present danger of wounding the ureters. He compared the separation of adhesions by Schultze's method and vaginal colpotomy with the danger of concealed hæmorrhage in the former, and expressed his preference for the latter method as being more under control.

He insisted strongly that no one should undertake vaginal colpotomy who was not prepared to open the abdomen if found necessary, as there was always present the danger of uncontrollable hæmorrhage, and the possibility of being unable to complete the operation from below. He then mentioned certain cases not suited to this operation, as large dermoid tumours, deformity of the pelvis, rendering the operation very difficult; large ovarian tumours, and advanced ectopic gestation. He claimed as advantages the absence of risk of ventral hernia, less shock, absence of the distressing thirst so common after even exploratory abdominal incision, and more speedy convalescence. In summing

up he thought the question to ask oneself was—Can this be done by the vagina?

The PRESIDENT said that in some cases it is absolutely impossible to diagnosticate whether one is dealing with a single or a double salpingitis. As regards the removal of small subserous fibromata when the uterus is taken down, he said it was his experience to meet with a lot of these which never did the patient the slightest harm. It has been claimed that intestinal adhesions can be dealt with easily by colpotomy, and that the intestines never come into view; but there were a good many cases of intestinal adhesions when, if one were unfortunate enough in bringing them down so as to injure the intestines or the vermiform appendix, such cases would likely have to be finished by the abdominal method.

DR. A. J. SMITH did not think it the correct operation for ruptured tubal pregnancy, as a large blood-clot sometimes extended up to above the umbilicus, and he thought that this clot could not be as efficiently removed as by the abdominal method. He thought that for prolapsed ovaries and catarrhal tubes it was a matter of slight difference whether the abdomen was opened from below or above.

DR. HENRY JELLETT thought that enough importance was not given to vaginal cœliotomy as a means of diagnosis pure and simple. In certain cases of dysmenorrhœa, where it is ovarian, he thought it was justifiable to examine the ovaries if any sign of pathological condition could be obtained by a bimanual examination.

DR. SMYLY—When posterior or anterior colpotomy should be performed depended upon the circumstances of the case, whether the uterus was ante-verted or retro-verted, and where the pathological condition was situate. He did not approve of Dührssen's method of anterior colpotomy, but of Mackenrodt's. As regards vaginal fixation he did not altogether agree with Dr. Wilson; he did not think it a good method for ruptured tubal pregnancy on account of the difficulty in knowing when all the clots were cleared away. He had performed the operation for ovarian tumour for pyosalpinx in several cases, and for ruptured tubal pregnancy. With regard to pyosalpinx he said that the uterus is really infected before the tubes, and unless the uterus is removed the disease is not cured.

DR. R. D. PUREFOY thought that vaginal colpotomy was very suitable for small movable tumours, whatever their origin. He was of opinion that it was not as good as laparotomy for most cases of pyosalpinx and tubal pregnancy. Sometimes the operation was

very troublesome. He was quite unable to accept the proposition that in every case of pyosalpinx the uterus should be removed.

DR. WINIFRED DICKSON thought it a great advantage not to have an abdominal incision.

DR. WILSON, in reply to the President, said that he was far from saying that every time a fibroma or myoma was diagnosticated a colpotomy should be done. It was not always the size of a myoma which caused the symptoms. The vermiform appendix is often seen in operations by the vagina, and may be taken out and put back without danger. Adhesions of the intestines to the uterus, ovaries, and tubes could be easily separated. He (Dr. Wilson) thought Dührssen's method very bad, and Mackenrodt's nearly as bad. If the fundus was not brought through the peritoneum most probably the operation would be a total failure and the fundus would subsequently retrovert. He did not think with Dr. Smyly that an abdominal section should be done to separate adhesions preparatory to removal of double pyosalpinx by the vagina. He believed that it was in separating the tubes from their adhesions that they burst. With reference to prolapse operations he thought that perhaps extirpation was the best method in elderly women. For younger women he thought that an anterior and posterior colporrhaphy and a properly fitting pessary was best.

The Section then adjourned.

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#### ECZEMA FROM TOOTH-WASHES.

PROFESSOR NEISSER, of Breslau, recently reported two cases of obstinate facial and labial eczema in children, with which, after months, he had been able to accomplish nothing by all manner of treatment. In both cases the eczema disappeared, practically without treatment, on the discontinuance of a patent mouth-wash called Odol, which is very popular in Germany. In two other cases the use of tooth-washes containing small portions of the essential oils of peppermint and cloves seemed to give rise to corresponding intractable eczema. As Odol contains small quantities of these oils for flavouring purposes, he considers that this is probably the irritant element, and warns the profession against allowing the use of such flavoured tooth-washes in practice.—*The Philadelphia Medical Journal*, March 12, 1898.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ;  
F.R.C.P.I. ; F. R. Met. Soc. ;  
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

## VITAL STATISTICS

*For four weeks ending Saturday, February 26, 1898.*

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Feb. 5	Feb. 12	Feb. 19	Feb. 26		Feb. 5	Feb. 12	Feb. 19	Feb. 26
23 Town Districts	26·3	30·2	26·7	29·7	Limerick -	15·4	15·4	15·4	23·9
Armagh -	35·6	42·8	7·1	7·1	Lisburn -	29·8	21·3	12·8	38·3
Ballymena	28·2	28·2	22·5	5·6	Londonderry	17·3	36·1	31·4	34·6
Belfast -	26·7	32·2	29·3	38·4	Lurgan -	9·1	36·5	27·4	18·2
Carrickfergus	46·7	0·0	11·7	11·7	Newry -	20·1	8·1	36·2	28·2
Clonmel -	4·9	34·1	29·2	14·6	Newtownards	28·3	11·3	51·0	17·0
Cork -	15·9	21·5	15·9	28·4	Portadown	6·2	24·7	30·9	37·1
Drogheda -	41·8	38·0	45·6	41·8	Queenstown	17·2	17·2	17·2	5·7
Dublin -	32·3	33·1	27·9	30·3	Sligo -	20·3	30·5	45·7	30·5
Dundalk -	25·1	8·4	8·4	12·6	Tralee -	16·8	16·8	11·2	33·6
Galway -	18·9	41·5	37·8	37·8	Waterford	28·9	33·8	15·9	23·9
Kilkenny -	9·4	47·2	28·3	0·0	Wexford -	22·6	36·1	31·6	49·7

In the week ending Saturday, February 5, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 21·5), was equal to an average annual death-rate of 19·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·0 per 1,000. In Glasgow the rate was 18·7. In Edinburgh it was 17·9.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 26·3 per 1,000 of their aggregate population, which for the purposes of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in seventeen of the districts to 8·5 in Lisburn—the 7 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from diarrhoea. Among the 156 deaths from all causes registered in Belfast are 3 from measles, 1 from whooping-cough, 1 from diphtheria, 12 from enteric fever, and 1 from diarrhoea. The 23 deaths in Cork comprise 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 212—105 boys and 107 girls; and the registered deaths to 220—119 males and 101 females.

The deaths, which are 3 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 32·8 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 32·3 per 1,000. During the first five weeks of the current year the death-rate averaged 31·5, and was 3·2 under the mean rate in the corresponding period of the ten years 1888–1897.

Twenty-nine deaths from zymotic diseases were registered, being 3 over the average for the corresponding week of the last ten years, but equal to the number for the previous week. They comprise 2 from scarlet fever (scarlatina), 14 from influenza and its complications, 3 from whooping-cough, 7 from enteric fever, and 2 from diarrhoea.

The number of cases of scarlatina admitted to hospital was 28, being 2 under the admissions in each of the two weeks preceding. Twenty scarlatina patients were discharged, and 188 remained under treatment on Saturday, being 8 over the number in hospital on that day week. This number is exclusive of 23 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Twenty-eight cases of enteric fever were admitted to hospital against 26 in the preceding week and 19 in the week ended January 22. Twenty-four patients were discharged, 3 died, and 129 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Diseases of the respiratory system caused 47 deaths, being 4



over the number of deaths from these diseases during the preceding week, but 8 under the average for the fifth week of the last ten years. The 47 deaths consist of 32 from bronchitis and 15 from pneumonia.

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In the week ending Saturday, February 12, the mortality in thirty-three large English towns, including London (in which the rate was 22·2), was equal to an average annual death-rate of 20·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·1 per 1,000. In Glasgow the rate was 22·4, and in Edinburgh it was 17·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 30·2 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in fourteen of the districts to 14·3 in Armagh—the 6 deaths from all causes registered in that district comprising 1 from diphtheria and 1 from enteric fever. Among the 188 deaths from all causes registered in Belfast are 1 from scarlatina, 5 from whooping-cough, 4 from diphtheria, 11 from enteric fever, and 2 from diarrhoea. The 23 deaths in Londonderry comprise 4 from whooping-cough.

In the Dublin Registration District the registered births amounted to 233—115 boys and 118 girls; and the registered deaths to 234—109 males and 125 females.

The deaths, which are 31 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 34·9 in every 1,000 of the population. Omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the district, the rate was 33·1 per 1,000. During the first six weeks of the current year the death-rate averaged 32·1, and was 1·8 under the mean rate in the corresponding period of the ten years 1888-1897.

The number of deaths from zymotic diseases registered was 29, being 5 in excess of the average for the corresponding week of the last ten years, but equal to the number for the previous week. The 29 deaths comprise 3 from scarlet fever (scarlatina), 9 from influenza and its complications, 2 from whooping-cough, 2 from diphtheria, 7 from enteric fever, 2 from diarrhoea, 1 from dysentery, and 1 from erysipelas.

Twenty-eight cases of scarlatina were admitted to hospital.

Thirty-three scarlatina patients were discharged, 2 died, and 181 remained under treatment on Saturday, being 7 under the number in hospital on that day week. This number is exclusive of 26 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 24, being 4 under the admissions in the preceding week. Twenty-two patients were discharged, 5 died, and 126 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

Deaths from the diseases of the respiratory system, which had risen from 43 in the week ended January 29 to 47 in the following week, further rose to 66, or 14 over the average for the corresponding week of the last ten years. The 66 deaths consist of 48 from bronchitis, 16 from pneumonia, and 2 from croup.

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In the week ending Saturday, February 19, the mortality in thirty-three large English towns, including London (in which the rate was 21·5), was equal to an average annual death-rate of 20·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·4 per 1,000. In Glasgow the rate was 21·7, and in Edinburgh it was 18·8.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 26·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in fourteen of the districts to 8·1 in Newry—the 9 deaths from all causes registered in that district comprising 2 from enteric fever. Among the 171 deaths from all causes registered in Belfast are 1 from diphtheria, 1 from simple continued fever, 4 from enteric fever, and 2 from diarrhoea. The 20 deaths in Londonderry comprise 1 from whooping-cough and 1 from diarrhoea. ‘The Registrar for Wexford District remarks—“Three deaths occurred from influenza.”’

In the Dublin Registration District the registered births amounted to 234—124 boys and 110 girls; and the registered deaths to 191—83 males and 108 females.

The deaths, which are 25 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·5 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 27·9 per 1,000.

During the first seven weeks of the current year the death-rate averaged 31·6, and was 2·1 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 26, being 1 under the average for the corresponding week of the last ten years, and 3 under the number for the previous week. The 26 deaths comprise 2 from scarlet fever (scarlatina), 11 from influenza and its complications, 2 from whooping-cough, 1 from diphtheria, 4 from enteric fever, 1 (in the Richmond District Lunatic Asylum) from beri-beri, 2 from diarrhoea, and 1 from erysipelas.

The number of cases of scarlatina admitted to hospital fell to 22. Thirty-seven scarlatina patients were discharged, and 166 remained under treatment on Saturday, being 15 under the number in hospital at the close of the preceding week. This number does not include 27 convalescents at Beneavin, Glasnevin.

The admissions of cases of enteric fever were 16 only, against 24 in the preceding week and 28 in the week ended February 5. Twenty-five patients were discharged, 4 died, and 113 remained under treatment on Saturday, being 13 under the number in hospital on that day week.

Deaths from diseases of the respiratory system, which had risen to 66 in the previous week, fell to 41, or 12 under the average for the corresponding week of the last ten years. The 41 deaths comprise 30 from bronchitis and 9 from pneumonia.

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In the week ending Saturday, February 26, the mortality in thirty-three large English towns, including London (in which the rate was 21·9), was equal to an average annual death-rate of 20·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·5 per 1,000. In Glasgow the rate was 20·7, and in Edinburgh it was 19·2.

The average annual death-rate in the twenty-three principal town districts of Ireland was 29·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·3 per 1,000, the rates varying from 0·0 in seventeen of the districts to 4·7 in Londonderry—the 22 deaths from all causes registered in that district comprising 3 from whooping-cough. Among the 195 deaths from all causes registered in Belfast are 1 from typhus, 3 from whooping-cough, 5 from diphtheria, 2 from enteric fever, and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 199—107 boys and 92 girls; and the registered deaths to 209—95 males and 114 females.

The deaths, which are 1 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·2 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 30·3 per 1,000. During the first eight weeks of the current year the death-rate averaged 31·5, and was 1·9 under the mean rate in the corresponding period of the ten years 1888-1897.

Twenty-seven deaths from zymotic diseases were registered, being 1 over the number for the preceding week, and 4 over the average for the 8th week of the last ten years. They comprise 13 from influenza and its complications, 4 from diphtheria, 4 from enteric fever, and 1 from diarrhoea.

There has been a further decline in the number of cases of scarlatina admitted to hospital, the admissions numbering 13 only. Twenty-five scarlatina patients were discharged, 1 died, and 153 remained under treatment on Saturday, being 13 under the number in hospital at the close of the preceding week. There were in addition 23 convalescents at Beneavin, Glasnevin.

The decline in the weekly number of cases of enteric fever admitted to hospital, noted in the returns for the two preceding weeks, has not continued, 32 cases having been admitted against 16 in the preceding week, 24 in the week ended February 12, and 28 in that ended February 5. Seventeen patients were discharged, 4 died, and 124 remained under treatment on Saturday, being 11 over the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 51, being 10 over the number in the preceding week, but 6 under the average for the 8th week of the last ten years. The 51 deaths comprise 39 from bronchitis, 8 from pneumonia, and 2 from pleurisy.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1898.*

Mean Height of Barometer, -	-	-	29·926 inches.
Maximal Height of Barometer (11th, 9 p.m.), -	30·289	„	
Minimal Height of Barometer (21st, 7 15 a.m.),	29·070	„	
Mean Dry-bulb Temperature, -	-	-	41·3°
Mean Wet-bulb Temperature, -	-	-	39·0°.
Mean Dew-point Temperature, -	-	-	36·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·214	inch.	
Mean Humidity, -	-	-	81·6 per cent.
Highest Temperature in Shade (on 1st), -	59·0°.		
Lowest Temperature in Shade (on 24th), -	28·1°.		
Lowest Temperature on Grass (Radiation) (on 23rd), -	-	-	27·0°.
Mean Amount of Cloud, -	-	-	50·4 per cent.
Rainfall (on 18 days), -	-	-	1·743 inches.
Greatest Daily Rainfall (on 17th), -	-	-	·576 inch.
General Directions of Wind, -	-	-	W., N.W.

*Remarks.*

Of average mean temperature, this month was no less than 5° colder than January. It was a rainy month, for there were only ten days on which there was no registrable rainfall; but the downpours were not heavy, except on the 17th, when more than half an inch was recorded. The prevailing winds were W. and N.W., and the force of the wind was often considerable. On the whole, the month was a fairly average February.

In Dublin the mean temperature (42·9°) was 0·1° above the average (42·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 41·3°. In the thirty-three years ending with 1897, February was coldest in 1895 (M.T.=34·2°), and warmest in 1869 (M. T.=46·7°). In 1897 the M. T. was as high as 46·0°.

The mean height of the barometer was 29·926 inches, or 0·071 inch above the average value for February—namely, 29·855 inches. The mercury rose to 30·289 inches at 9 p.m. of the 11th, and fell to 29·070 inches at 7 15 a.m. of the 21st. The observed range of atmospheric pressure was, therefore, 1·219 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 41·3°, or 6·1° below the value for January, 1898. Using the formula, *Mean Temp.* =

*Min.* + (*max.* — *min.* × .50), the M. T. is 42·9°, compared with a twenty-five (1865–1889) years' average of 42·8°. On the 1st the thermometer in the screen rose to 59·0°—wind, S.W.; on the 24th the temperature fell to 28·1°—wind, W. The minimum on the grass was 27·0°, on the 23rd—wind, N.W.

The rainfall was 1·743 inches, distributed over 18 days. The average rainfall for February in the twenty-five years, 1865–89, inclusive, was 2·150 inches, and the average number of rainy days was 17·2. The rainfall, therefore, was below, while the rainy days were above, the average. In 1883 the rainfall in February was large—3·752 inches on 17 days; in 1879 also 3·706 inches fell on 23 days. On the other hand, in 1891, only .042 inch was measured on but 2 days. The rainfall in 1891 was much the smallest recorded in February for very many years. The record is probably unparalleled in Dublin—.042 inch on 2 days.

The atmosphere was foggy on 3 days—the 17th, 23rd, and 24th. The amount of cloud—50·4 per cent.—was much below the average—66 per cent. High winds were noted on 18 days, and reached the force of a gale on the 1st, 2nd, 4th, 12th, and 15th. A solar halo was seen on the 5th; lunar halos were seen on the 4th and 6th.

The temperature reached or exceeded 50° in the screen on 11 days, and it fell below 32° on 7 nights, compared with as many as 18 nights in 1895, and only 1 night in 1896. The minima on the grass were 32°, or less, on 10 nights, compared with every night in 1895, 10 nights in 1896, and 4 nights in 1897. The thermometer once failed—on the 21st—to rise to 40° in the screen.

The weather fell into a very changeable state during the period ended Saturday, the 5th. At 8 a.m. of Sunday, January 30, the barometer ranged from 30·80 inches at Lyons to 28·85 inches at Bodö, in the N.W. of Norway. Hence strong S.W. or W. winds or gales were prevalent and temperature was extremely high. The reduction of atmospheric pressure in the N. culminated on Wednesday morning when the barometer was down to 28·57 inches in the Shetlands. Strong W. to N.W. gales were felt on the British and Irish coasts. With the veering of the wind to N.W. temperature gave way briskly. The depressions also began to travel southeastwards across Scandinavia and the North Sea, so that by the end of the week winter seemed fully established over North-Western Europe. On Friday snow and sleet fell in Great Britain, and at night there was sharp frost in many places. A very perfect lunar halo was seen on Friday evening. In Dublin the barometer ranged between 30·128 inches at 9 a.m. of Tuesday (wind, S.W.) and

29·461 inches at 9 a.m. of Friday (wind, N.W.). On Tuesday the screened thermometers rose to 59·0°, on Saturday they fell to 31·1°. The rainfall was ·408 inch on 5 days, ·213 inch being measured on Thursday. The prevailing winds were W. and N.W. Sleet and hail fell on Wednesday, the 2nd.

While changeable, the weather of the week ended Saturday, the 12th, was in most respects favourable. The first two days were cold, with strong W.N.W. winds and showers of sleety rain and hail at times. At this time the centre of a depression of some depth (29·20 inches) lay between Scotland and Norway, drawing strong, cold N.W. winds in from the Atlantic. The next three days were chiefly fine and mild, with S.W. winds on Wednesday and Thursday. On the night of the last-named day a fresh gale from the southwestward was felt in the N.W. of Ireland and also in the E. of Scotland. The wind was gusty on nearly all coasts. There was not much rain, except at Belmullet in Mayo, and Stornoway in the Hebrides. In Ireland the wind veered temporarily to W.N.W. on Friday, and a beautiful day was enjoyed. At night a fresh backing of the wind to S.W. in Ireland ushered in a new S.W. system, with squalls and a good deal of cloud. Saturday was a dry, searching, squally day. Rain fell in the evening. For the first time this winter severe and continuous cold held in Sweden and Lapland. At Haparanda, on the Gulf of Bothnia, the 8 a.m. temperatures were—13°,—8°,—24°,—22°,—28°,—11°, and +8° respectively. In Dublin the mean height of the barometer was 30·042 inches, pressure varying from 29·762 inches at 9 a.m. of Sunday (wind, W. by N.) to 30·289 inches at 9 p.m. of Friday (wind, W.). The mean temperature was 45·1°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 43·2°. The screened thermometers fell to 35·9° on Monday, and rose to 53·7° on Thursday. Rain fell on three days to the amount of ·206 inch, ·089 inch being measured on Sunday. The prevailing winds were W.N.W. and S.W.

Changeable, but seasonable, weather prevailed during the week ended Saturday, the 19th. An area of high barometer (anti-cyclone) was generally found lying over the Bay of Biscay, France, and the Peninsula; while (as in past weeks) cyclonic conditions ruled in the British Islands and Scandinavia. Hence came a prevalence of strong and squally westerly winds, with open, showery, or at times rainy weather. At 8 a.m. of Wednesday the barometer read only 28·75 inches at Christiansund, on the west coast of Norway, but stood as high as 30·53 inches at Lyons. Strong westerly gales were felt on Tuesday afternoon over Scotland and the North



of Ireland, and these were followed by equally strong north-westerly gales on Wednesday forenoon. As the deep depression referred to travelled away to the eastward the weather improved and the wind moderated. On Thursday afternoon, however, the distribution of pressure became complex, owing to the formation of secondary depressions over the British area. One of these caused an easterly breeze and heavy rainfall in the Dublin district on Thursday night and Friday forenoon. The weather then cleared temporarily, and became cold, only to fall into an unsettled state once more on Saturday afternoon and during the ensuing night. In Dublin the mean height of the barometer was 30·038 inches, pressure varying between 30·267 inches at 9 p.m. of Wednesday (wind, W. by N.) and 29·610 inches at 9 p.m. of Saturday (wind, W.N.W.). The mean temperature was 44·7°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 44·0°. On Tuesday the screened thermometers rose to 55·8°; on Saturday they fell to 32·0°. The rainfall was ·717 inch on 4 days, ·576 inch being measured on Thursday. Westerly winds again predominated.

The week ended Saturday, the 26th, was the coldest week of the present winter. In Dublin frost occurred under cover (in the thermometer screen) on five nights, and on the grass nightly. The cold weather of the earlier part of the period was brought about by the passage southwards across Western Europe of a deep atmospheric depression between Sunday and Thursday. At 8 a.m. of Sunday the centre of this system was a little to the eastward of the Shetland Isles, and the barometer read only 28·76 inches at Sumburgh Head. All that day the barometer fell in England and Ireland as the system moved southwards, and cold W. winds, with showers of hail, sleet, and snow became general. By 8 a.m. of Monday the centre had reached St. George's Channel. The depression had begun to fill up, for the lowest pressure was now 29 inches (at Roche's Point, Cork). The centre lay over Brittany on Tuesday morning, had reached Bordeaux on Wednesday morning, and the Riviera on Tuesday morning. Up to this time very cold weather held in the British Isles, the snow-storm on Monday and Tuesday being particularly severe over the S.W. of England. On Friday a new depression edged in from the Atlantic, moving northeastwards and spreading eastwards. It caused high temperature for a short time, followed by heavy rain. This was, in turn, succeeded by clear and cold weather. In Dublin the mean height of the barometer was 29·738 inches, the observed range being from 29·070 inches at 7 15 a.m. of Monday (wind, E.) to 30·171 inches at 9 a.m. of Thursday (wind, W.).



The mean temperature was  $38.2^{\circ}$ . The mean dry bulb temperature at 9 a.m. and 9 p.m. was  $35.9^{\circ}$ . On Thursday the screened thermometers sank to  $28.1^{\circ}$ , on Friday they rose to  $51.0^{\circ}$ . Rain fell on five days to the amount of .334 inch, .204 inch being measured on Friday. The prevailing wind was N.W. Snow or hail fell on each of the first three days.

The last two days were changeable and rather cold, with westerly winds.

In Dublin the rainfall up to February 28th, 1898, amounted to 3.529 inches on 32 days, compared with 4.089 inches on 33 days in 1897, only 1.588 inches on 24 days in 1896, 6.336 inches on 33 days in 1895, .714 inch on 16 days in 1891, and a twenty-five years' (1865–1889) average of 4.350 inches on 34.5 days.

At Knockdolian, Greystones, Co. Wicklow, 1.635 inches of rain fell in February on 16 days. The heaviest fall in 24 hours was .425 inch on the 17th. The total fall to February 28th inclusive was 3.980 inches on 29 days, compared with 5.190 inches on 37 days in 1897, and only 1.940 inches on but 17 days in 1896.

The rainfall in February at Cloneevin, Killiney, Co. Dublin, amounted to 1.74 inches on 16 days. The average rainfall for February during 12 years (1885–96) at this station is 1.461 inches on 12.5 days. The greatest rainfall in 24 hours was .58 inch on the 17th. Snow fell on the 20th and 21st. Since January 1, the rainfall was 3.32 inches on 29 days, compared with 4.31 inches on 38 days in 1897, and 1.64 inches on 19 days in 1896.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell on 18 days in February, the total measurement being 1.607 inches. The corresponding figures for February, 1897, were 1.718 inches on 15 days. On the 25th, .332 inch was registered. At this climatological station the lowest temperature in the screen was  $27.0^{\circ}$  on the 21st, the highest was  $57.0^{\circ}$  on the 1st. Since January 1, the rainfall has been 3.923 inches on 27 days.

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#### BRYONIN IN THE TREATMENT OF HEPATIC CONGESTION.

THE *Gazette hebdomadaire de médecine et de chirurgie* for February 3, 1898, gives the following formula:—

R. Bryonin, grain  $1\frac{1}{2}$   
Sugar of milk, grains 60  
Gum arabic, grains 15  
Syrup, a sufficiency.

M. Divide into a hundred granules. One to be taken every two hours until the bowels are sufficiently moved.—*N. Y. Med. Jour.*, March 19, 1898.

## NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

### *The Dietetic Treatment of Disease.*

PERSONALLY we are of opinion that it is a physician's duty to arrange the diet of each of his patients with the same regard to an invalid's individuality as that which characterises, or should characterise, his prescriptions. At the same time we do not deny that Diet Tables have their uses, particularly when they are as carefully and cleverly drawn up as those are which Dr. W. Langford Symes has designed. His well-known "Diet Cards for the Consulting Room" have now reached a fourth edition—a fact which itself sufficiently justifies their existence. The dietaries are five in number, neatly printed on fine, variously coloured cards, of the size of  $4\frac{3}{4} \times 3\frac{1}{2}$  inches, thus fitting into the coat pocket or into an ordinary square envelope. Although primarily intended for acute inflammatory diseases and fevers, convalescence, gout, diabetes, and constipation, the cards can be adapted to any individual case, the physician cancelling what he deems to be unsuitable articles, or adding what he thinks desirable or essential for his patient.

The diet cards are neatly put up in packets of five assorted kinds, each packet costing half-a-crown, post free. They are printed and published by H. Silverlock, 92 Blackfriars Road, London, S.E.

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### HEREDITARY GRANULAR KIDNEY IN EARLY CHILDHOOD.

HELLENDALL (*Archiv für Kinderheilkunde*, xxii., pp. 61) reports two cases of bilateral chronic interstitial nephritis in children whose mother also suffered from chronic nephritis. The older of the two lived two years, the younger six months. The history of the case points to the fact that the disease of the mother began with the pregnancy of the first child. The degree of contraction, which, upon microscopical and macroscopical examination of the kidneys of both children, was very intense and marked, leads HELLENDALL to the conclusion that the development of the contracted kidney began *in utero*. There was no syphilitic history. Bacteria could not be demonstrated. Scarlet fever and other ætiological factors were wanting. Thus far but nine cases (including these two) of primary granular kidney have been reported.—*Med. Record*, March 19, 1898.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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MAY 2, 1898.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XIX.—*Laryngeal Ulceration in the Advanced Stage of Typhoid Fever.*<sup>a</sup> By J. MAGEE FINNY, M.D. Dubl.; Past Pres., Royal College of Physicians, Ireland; King's Prof. Practice of Medicine in the School of Physic; Physician to Sir Patrick Dun's Hospital.

SIR GEORGE DUFFEY, M.D., Pres. R.C.P.I., read a valuable and exhaustive paper on the subject of laryngeal complication in typhoid fever<sup>b</sup> before the Royal Academy of Medicine, on Jan. 28, 1898, in which he gave the details of a case under his care, which had ended fatally on the forty-fourth day of his illness and the seventh day from the accession of laryngeal symptoms.

In the discussion which followed the reading of his paper, I made a short reference, from memory, to a similar case which had occurred under my care at Sir Patrick Dun's Hospital. My recollection of many of the details was at fault, as two years had elapsed since the case had been under treatment, and I had not looked up the notes of it in the meantime.

I now present an abstract of the case, taken from the

<sup>a</sup> Read before the Medical Section of the Royal Academy of Medicine in Ireland on Friday, April 15, 1898.

<sup>b</sup> Laryngeal Necrosis in Typhoid Fever. Dublin Journal of Medical Science. Third Series. No. CCCXV., p. 185.

Hospital Records by Dr. Littledale, House Surgeon, as I believe it will prove an instructive additional contribution to the literature of this rare and dangerous complication of typhoid fever.

CASE.—A. J., a Norwegian sailor, aged about twenty, was admitted to hospital on November 4th, 1895. He could give no history of his sickness, being unable to speak English, but complained chiefly of a pain in the lower part of his abdomen. He also suffered from cough, and expectorated some thin, viscid sputum with ropy masses of mucus. The tongue were thickly coated; bronchitic râles all over the chest were the only abnormal sign. Later the motions were of a typical typhoid nature, and the spleen was found to be enlarged. The throat also looked very sore.

From this time on the fever, although somewhat severe, ran an uneventful course, the temperature almost touching normal in 21 days after admission, and probably the 25th day of his fever. Towards the end of the time, however, the patient became decidedly hoarse, and complained of laryngeal pain.

On the night of the 25th November, about the 24th day of the disease, the huskiness increased to almost aphonia, and the patient was attacked by spasm of the glottis and dyspnoea, which was temporarily relieved by hot applications. A consultation was held on his case on the following morning, and it was decided that tracheotomy was not then advisable, but that everything should be kept in readiness in case of necessity.

This necessity occurred on December 4th, when the dyspnoea was so great that my colleague, Dr. Taylor, decided to perform tracheotomy at once; indeed, so urgent were the symptoms that in spite of great haste the patient's breathing stopped while he was on the table, and artificial respiration had to be resorted to.

For two days the fever was very high, but dropped below normal on the third day. After this the patient had a good recovery from the fever, but the tube could not be permanently removed, attempts being made on several occasions, but without success, as the tube had generally to be replaced within a few hours.

On January 3rd, 1896, Dr. R. H. Woods examined the larynx and found a yellow ulcerating patch between the true and false vocal cords on the left side; and again on March 8th, when he advised dilatation of the larynx.

An attempt was made on March 11th to do this by Dr. Taylor, which was, however, unsuccessful, as the patient became almost asphyxiated in the attempt, and the use of the tracheotomy tube

had to be continued. Another attempt was also made later on to cause the respiration to return to its normal path by gradually closing the opening, but also without success.

When the patient left the hospital to return to his own country, on July 9th, 1896, he was in excellent health, but still continued the use of the tracheotomy tube.

The principal points of scientific and clinical interest illustrated by the foregoing case are:—

1. The complication occurred in a young man, aged twenty, thereby conforming, as regards this ætiological factor, with the majority of published cases.

2. The pharynx and larynx as well as the mucous membrane of the bronchial tubes were inflamed from an early stage of the fever, as evidenced by cough and expectoration of ropy mucus; and when the bronchial catarrh subsided the laryngeal complication became more pronounced.

3. The laryngeal symptoms became urgent after the primary fever had abated.

4. Operative interference became suddenly imperative, ten days later: suggesting, as a hint for future practice in similar cases, the advisableness of (*a*) having every arrangement made for immediate tracheotomy when the necessity should arise; or, (*b*) having the tracheal tube inserted before the urgency arose, as soon as the symptoms and signs clearly demonstrate the presence of this grave complication.

5. The presence of an ulcer posteriorly between the vocal cords which ended in cicatricial stenosis.

6. The absolute nature of the closure, so that the tracheal tube could never be dispensed with afterwards, and the failure to use intubation or dilatation of the constricted larynx.

ART. XX.—*Abdominal Surgery: being Cases of Laparotomy for the Relief of Intestinal Obstruction.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

RELAPSING APPENDICITIS.

CASE I.—J. O'N., aged thirteen years, was brought to me by Sir Acheson M'Cullagh, of Londonderry, who had made the diagnosis, having attended the lad through two attacks of a very severe nature. Recognising the danger of allowing the disease to take its course, he wisely recommended laparotomy.

When I examined this patient I found the cæcum much distended, and midway between the anterior superior spine of the ilium and the umbilicus there was a firm nodule the size of a Tangerine orange. It was tender on pressure and very slightly movable.

*Operation.*—Being satisfied (from the history, and the site and character of the nodule) that we had to deal with a greatly thickened appendix, I made an incision in the right semilunar line four inches in length. On exposing the ileo-cæcal area no appendix showed, but the nodule could be felt through the cæcum, which I now brought through the incision. On the back of this viscus, extending upwards and outwards, I found the appendix. It was  $3\frac{1}{2}$  inches in length, had a bulbous end, which was embedded in much inflammatory exudation; here and there shreds of lymph were adherent over the back of the bowel and around the mesentery of the appendix, which was thick and very vascular. I applied a chain suture along the mesentery and cut it; then I freed the bulbous end by cutting a portion of the wall of the bowel with it (all this time gauze sponges were packed into the wound surrounding the field of operation). A line of Lembert's suture closed the cæcal wound, and now dissecting two lateral flaps of the sero-muscular wall of the root of the appendix, I snipped it off close to its origin. Inversion of the flaps and fixation by top stitching secured the mouth. The abdomen was closed without flushing.

On the eighth day the sutures were removed, and, notwithstanding the imperfect health in which the boy was at the time of operation, recovery was rapid and complete.

CASE II.—A. B., aged nineteen, was sent to me by Dr. Wilson, of Castleblayney, with a history of repeated attacks of abdominal pain, obstruction of the bowels attended by high temperature, and

distressing dry retchings. The last of these attacks had occurred seven weeks previous to his admission to St. Vincent's Hospital. On examination I found him pale and emaciated, with furred tongue, quick pulse, and subnormal temperature. He had been living on fluid diet, fearing to bring on one of these attacks which he so much dreaded.

I examined him under ether, and found that Dr. Wilson's diagnosis was correct. An ovoid swelling could be felt at the edge of the true pelvis. This part was tender on pressure, and this was the situation in which he had always experienced most distress.

*Operation.*—I cut down in the right semilunar line, behind which the great omentum was massed and adherent. This I separated from the abdominal wall, and, getting under its right border, I reached the appendix, which I found as depicted in Fig. 1. The slightest touch caused extraordinary contortions of

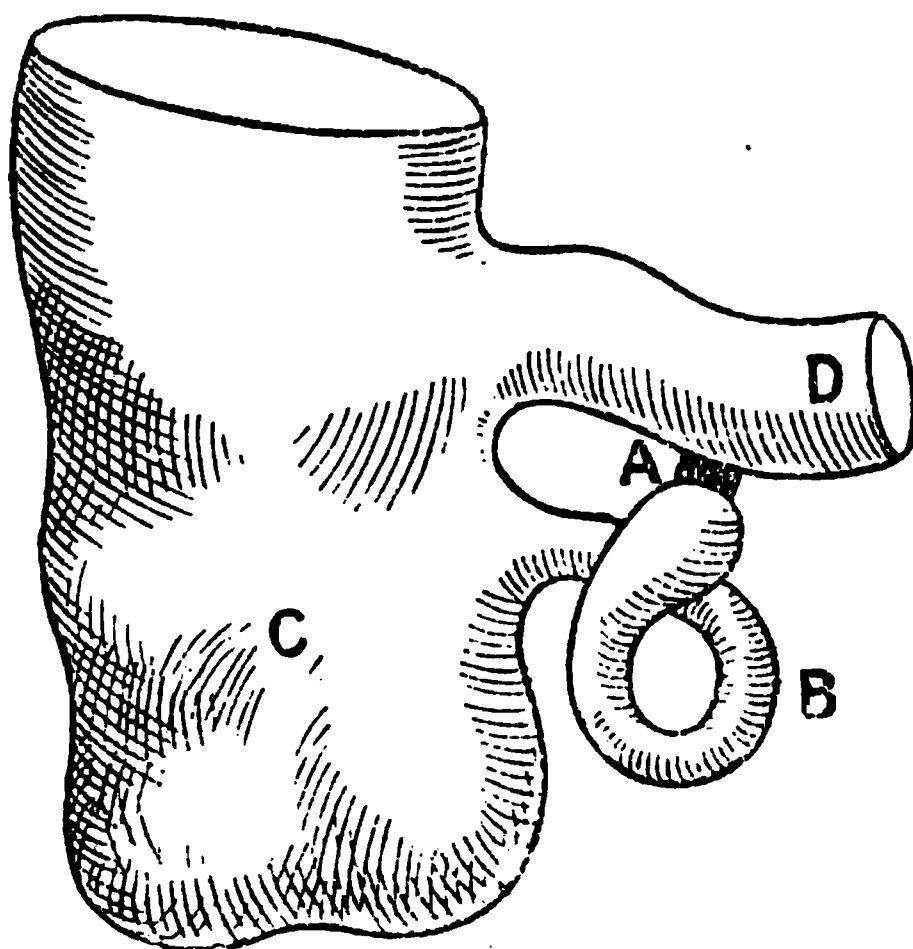


Fig. 1.

the appendix, followed by marked engorgement of the mesentery. Contractions of the muscular wall of the appendix much exaggerated the C-shape, and pulled upon the ileum, throwing it into spasm. At a point where the tip of the deformed and diseased structure was fixed by a firm adhesion, shown at A, Fig. 1, a cheesy mass was found between the layers of the mesentery along the concave border of the appendix. Between this mass and the cæcum I applied a chain suture. I double ligatured the adhesion

to the ileum and cut it. After section of the mesentery, I dealt with the root of the appendix, as in Case I., and closed the abdominal wound.

The course of this case was uneventful; recovery was rapid and complete.

#### PERFORATING APPENDICULAR ABSCESS.

CASE III.—E. H., aged twenty-one years, was carried into St. Vincent's Hospital on the night of March 16th, 1897, in a state of profound collapse. She was sent to me by Dr. M'Kenna, of the Kingstown Hospital. She had suffered from intestinal obstruction for some days, but on the day she came to me she suddenly became much worse; had stercoraceous vomiting, much abdominal pain and distension, and profound prostration. She was on admission semi-unconscious, cyanosed; her respirations were hurried and very shallow; pulse, 130. Seeing this patient in such a low condition I had her at once prepared for operation. On examination I found the abdomen very tense and glossy, with a bluish tinge, which did not disappear on pressure, showing that there was stasis in the abdominal vessels. There was a dull area extending from two fingers' breadth below the umbilicus to the pubes, being most marked on the right side, where fluctuation was to be felt. On examining the rectum I found coils of small intestine crushed into the pelvis; and bimanual examination proved the presence of fluid surrounding these coils. The history of this case pointed to perforation of an appendicular abscess as the cause of the trouble.

*Operation.*—Owing to the insensibility of the patient a very slight narcosis was necessary. A four-inch incision in the linea alba exposed a thickened and adherent omentum, through which I was obliged to cut. Great foetor was now noticed, and on passing my finger between some adherent coils of small intestine a great quantity of exceedingly offensive sero-purulent fluid escaped. I now flushed out the pelvis with sterilised water (as hot as could be borne by the hand) until the fluid returned clear. Exploration showed the small intestines to be matted together surrounding a great cavity, from the walls of which shreds of exudation material came away on gauze sponges with which the cavity was packed. The appendix was adherent along the iliac vessels, being overlapped by a dilated cæcum, to which it was also adherent.

Removal of the appendix would be attended in this case with many dangers:—1st. The low vitality of the patient would not



permit of prolonged operation ; 2nd. Its relation to the iliac vessels rendered rapid removal impossible ; 3rd. The dissection necessary, owing to extensive adhesions, would expose the back of the cæcum and the pelvic wall, leaving a large patch devoid of peritoneum.

Leaving the appendix untouched, I placed a glass drainage-tube in Douglas's pouch and packed the wound with iodoform gauze. A few silk-worm gut sutures closed the upper part of the abdominal wound, completing a rapid operation which left the patient much less distressed. A large gauze dressing was applied, and the patient removed to bed.

For some days there was copious discharge of sero-purulent material, necessitating frequent changes of the dressings. My house-surgeon, Dr. Kennedy, 108 Francis-street, Dublin, to whose attention this patient owes her recovery, washed out the abdomen frequently with sterilised water. Removing the glass tube on the fifth day he substituted a gauze drain. On the eighth day this drain was dispensed with, and on the sixteenth day the discharge ceased, and the patient left St. Vincent's on the twentieth day after admission looking and feeling quite well.

#### GALL-STONES CAUSING INTESTINAL TROUBLE, AND SIMULATING FLOATING KIDNEY.

CASE IV.—Mrs. H., aged forty-three. I saw this case in consultation with Dr. Horne at Merrion-square. *History*.—For some years she had suffered from constipation, with occasional attacks of retching. Medicines gave her very little relief, and of late she experienced much pain across the upper abdomen and a dragging in the right costo-lumbar region. Her usual attendant suspected she had a floating kidney, and on examination he found a mass in front of the right loin and reaching inwards to the umbilicus. She now came under Dr. Horne's care as she had some uterine trouble which he cured. Wishing to have the abdominal distress relieved she consulted him about this tumour, which he asked me to examine. In consultation with him and without an anæsthetic I made a bimanual examination, and ascertained that the right kidney was in place, and in front of it, and extending downwards and inwards, there was a semi-elastic mass, ovoid in outline and freely movable, laterally. On pressure this mass slipped suddenly upwards under the right costal arch, and it moved up and down with the respiratory acts. We explained to the patient that medicines could not be of any avail, and that in operation alone was there any chance of success.

*Operation.*—I made a vertical incision, five inches in length, from the 9th costal cartilage, and, on entering the abdomen, came immediately on the tumour, which proved to be a greatly distended gall-bladder. Before opening it I freed it all round from the omentum and colon to which it was fixed by recent adhesion. I then made a digital examination of the common bile duct, which I found normal, but in the cystic duct I found a large stone. On grasping the gall-bladder between my fingers I felt many large stones.

Packing the wound all round the gall-bladder with gauze sponges, and holding the fundus of that viscus outside the wound with fine vulsella, I made a free vertical incision into it, and gave exit to a great collection of muco-pus and many dark-coloured stones. Flushing with sterilised water removed the remainder of those collected in the gall-bladder; but the one in the cystic duct I was obliged to crush with a strong forceps, as no justifiable pressure outside the duct seemed to influence its shape. The gall-bladder was now fixed by a few silkworm-gut sutures in the upper angle of the wound, and the remainder of the incision closed by deep and superficial sutures of silver wire; a gauze drain was left in for some days, bile being freely discharged. Ten days after the operation the sutures were removed, and ten days later she kindly came to the Surgical Section of the Royal Academy of Medicine as one of a group of cases to illustrate the rapidity and soundness of healing of wounds in the semilunar line.

The stones in this case numbered 97, many of them being very large and none of them bearing facets.

#### HYDATID CYST SIMULATING DISTENDED GALL-BLADDER AND CAUSING OBSTRUCTION.

*CASE V.*—Miss C. B., aged twenty-four, came under my care suffering from severe pain in the abdomen and chiefly in the right lumbar region. She had had severe vomiting and had become greatly emaciated. The bowels could not be got to act properly although flatus passed occasionally. On examination I found a tumour occupying the right hypochondriac region and extending downwards to the anterior superior spine, it was tender on pressure, dull on percussion, and could be moved upwards and laterally with freedom, but could not be drawn downwards below inter-spinous line. It moved up and down with the respiratory act. An indistinct fluctuation could be detected, and, although the tumour felt ovoid, the dulness was encroached upon below and on

the left side by an irregular area of resonance. Owing to the ease with which the tumour could be felt through the quadratus lumborum it was thought to be of renal origin, but bimanual examination under ether enabled me to discover the kidney, normal in position and size, lying well behind and on a higher level than the tumour. There had been no jaundice, no history of recurring colicky pains, and so gall-stone trouble was unlikely. I decided that it was a hydatid connected with the under surface of the liver, or a distended gall-bladder.

*Operation.*—Assisted by Mr. Tobin and Dr. Alfred Smith, I opened the abdomen in the right semilunar line. I found the omentum adherent to the abdominal wall and with some difficulty detached it, to find that it was closely connected behind to the tumour. So firm were the adhesions that I was obliged to resect a

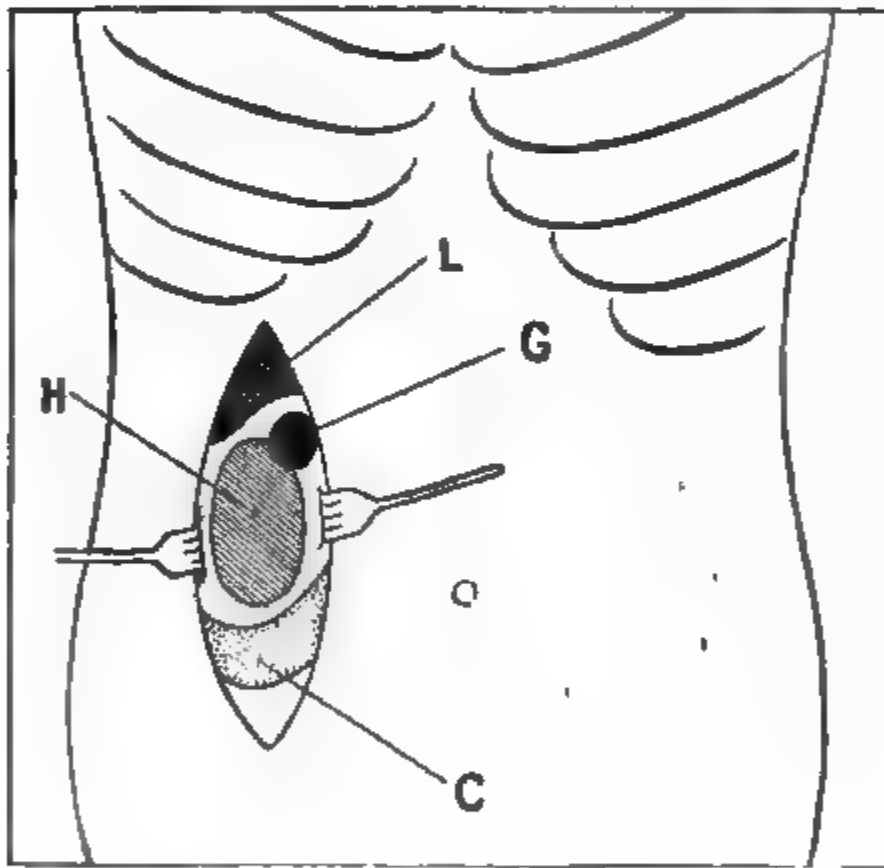


Fig. 2.

portion of the omentum. On turning down the stump of the omentum the tumour was exposed. It proved to be a hydatid as large as a fair sized melon and somewhat like it in shape. It was surrounded, as in Fig. 2, by the colon, which was firmly adherent to its lower and left surface. The gall-bladder presented, as at G, Fig. 2, green and distended, and the tumour could be traced to

the fissure of the gall-bladder, where it compressed the cystic duct and caused partial obstruction, leading to the distension observed.

The cause of intestinal trouble was very apparent when the colon (C, Fig. 2) was exposed. I found it dark purple in colour and firmly adherent to the lower and left lateral aspects of the tumour. The adhesions were very vascular, and during separation rather free bleeding occurred. Most of this was controlled by packing with very warm gauze sponges, but at several points double ligatures were necessary before section of unusually firm attachments could be carried out. The most difficult part of the operation was the separation from the liver and gall-bladder, and one very large vessel—a branch extending from the cystic—was with difficulty secured; at the root of the tumour many vessels required ligature. When the tumour was removed a great cavity existed below the liver, into which the colon bulged. This cavity was tamponed with iodoform gauze, and the greater part of the abdominal wound closed with silk-worm gut sutures.

Owing to the low vitality and the protracted nature of the operation the patient did not rally rapidly, but on the second day after the procedure she seemed nothing the worse of its gravity. For some days there was rather free sero-sanguineous discharge. This ceased after removal of the gauze drain, and on the thirteenth day, when the sutures were removed, the wound was soundly healed.

From this out recovery was rapid, and since there has been no vomiting or intestinal distress of any kind.

#### INTUSSUSCEPTION.

CASE VI.—Miss M., aged twenty-eight years, was sent to me by Drs. White and James, of Kilkenny. For some days she had suffered from severe paroxysmal pain in the lower abdomen, complaining that she felt like lead in the intervals of pain. The bowels had not acted although enemata had been administered. On making a rectal examination Dr. White discovered a mass of mucous membrane, projecting into the lumen of that tube, and feeling that nothing short of a serious operation would give relief, he sent the patient to the private hospital, 97 Lower Leeson-street, under my care on April 8th, 1898.

Rectal examination confirmed Dr. White's view, and I was satisfied that there was an invagination of the sigmoid into the rectum. There was only one central opening in the projecting mass, which reached within half a finger's length of the anus.

There was dulness over the supra-pubic region, and here the abdomen was doughy. Vomiting of stercoraceous matter was persistent, and the faecal matter was intolerable. Just before examination there was a discharge of mucus and blood from the bowel, but no faecal matter. The patient was cyanosed, had a quick, small pulse and subnormal temperature, and although under the influence of morphia she complained much of persistent pain over the lower abdomen of a dragging character, and constantly-recurring attacks of acute pain in the left side low down.

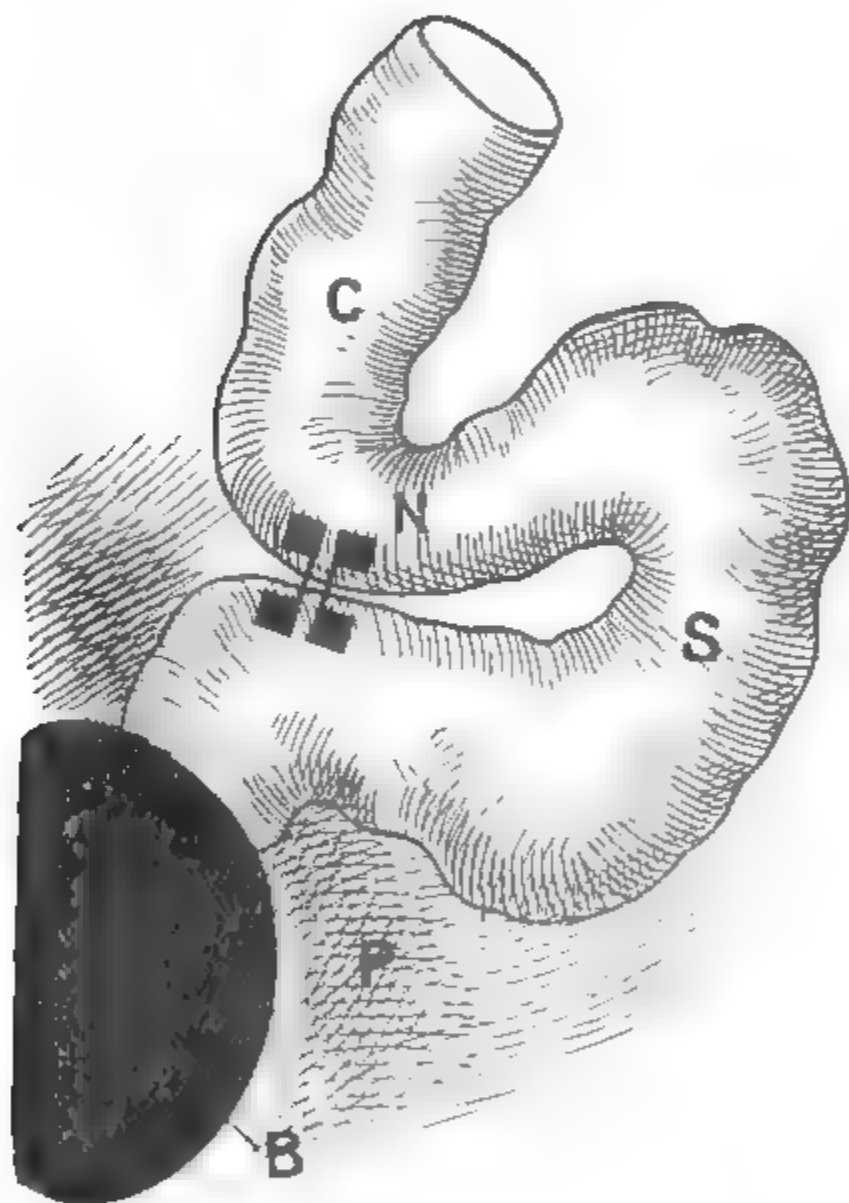


Fig. 3.

I determined on operating at once, and assisted by Drs. Horne and Fagan, and Mr. Reginald White, I made an incision in the middle line from the umbilicus to within an inch of the pubes. I examined the ileo-caecal area, then followed the large intestine round

until I reached the seat of obstruction, which I found to be situated at the lower end of the descending colon. The sigmoid was absent from the iliac fossa, but on passing my hand well down into the pelvis I found, as I suspected, that it had become invaginated into the rectum. Pressure from below, combined with gentle traction on the descending colon, released a loop about nine inches in length, representing the greater part of the sigmoid. This portion of the

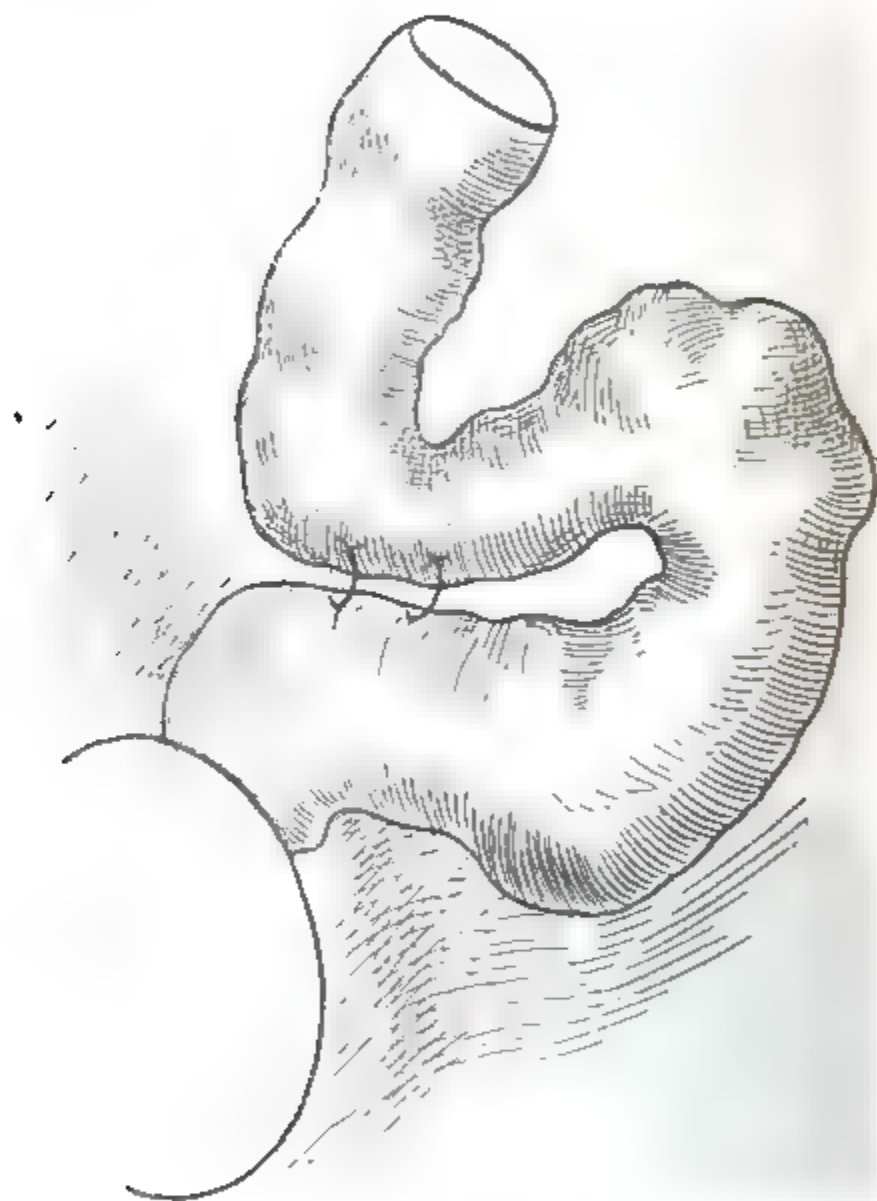


Fig. 4.

bowel was very dark in colour, and covered with shreds of recent adhesions. It was œdematous, and its mesentery was thickened, grayish-white in colour, and here and there along its attachment to the bowel the serous layers were separated by sero-sanguineous effusions.

The great thickness of the bowel-wall determined me in the

selection of the operation to be now carried out. Fixation of the loop in the left iliac fossa would prevent re-invagination, but owing to the enormous thickening of the wall of the bowel the lumen was much narrowed, and continued obstruction was likely. Again, the vitality of this portion of intestine was, from long strangulation, much impaired, and its distension by passing fæcal masses and gas might lead to perforation. I therefore determined on isolating the affected portion, and so selecting a healthy portion of the gut above and below, I inserted a Murphy's button, as in Fig. 3. The internal coats of the bowel were so œdematous that I thought it well to support the button by two Lembert's sutures, applied as shown in Fig. 4.

The temperature in this case never went above  $100^{\circ}$ , and recovery was remarkably rapid considering the low vitality of the patient on the night of operation.

Irrigation of all the exposed intestines with sterile water at a temperature of  $106^{\circ}$  soon re-established the circulation, as evidenced by the returning colour and beginning peristalsis. Soon gas commenced to pass through the button, and, satisfied that we had averted serious mischief in this case, I closed the abdominal wound with stout silkworm-gut.

**CASE VII.**—Mrs. M'M., aged fifty-one years, was sent to me by Dr. Frost, of Newmarket-on-Fergus, with a carefully-compiled memo. of the course of the trouble for some time, and outlining accurately the cause of severe intestinal obstruction, which only yielded to treatment by copious enemata. On examination I found an ovoid tumour, projecting downwards from under the right costal arch, reaching as low as the iliac crest. It was semi-elastic, nodular, and on percussion dull. It could be moved laterally, could not be drawn downwards, but pressure from below and in front caused it to slip with a jerk upwards and to the right under the costal arch. All the symptoms of gall-stones were present, but in addition there was a history of persistent and dangerous intestinal obstruction.

**Operation.**—On March 15th, 1898, assisted by Mr. Reginald White, I made a five-inch incision in the right semilunar line, from the edge of the ribs. On getting through the abdominal wall I found the omentum turned upwards over the tumour, and adhering to the edge of the liver. On separating the adhesions and pushing down the omentum, I came upon the gall-bladder, dark gray in colour and very tense. It was adherent all round to the colon, which it indented as in Fig. 5. This condition accounted fully for the intestinal obstruction noted by Dr. Frost. Free

incision of the fundus of the gall-bladder gave exit to a great quantity of muco-pus scarcely stained with bile, then a few calculi, held together by tenacious muco-purulent material, came away.

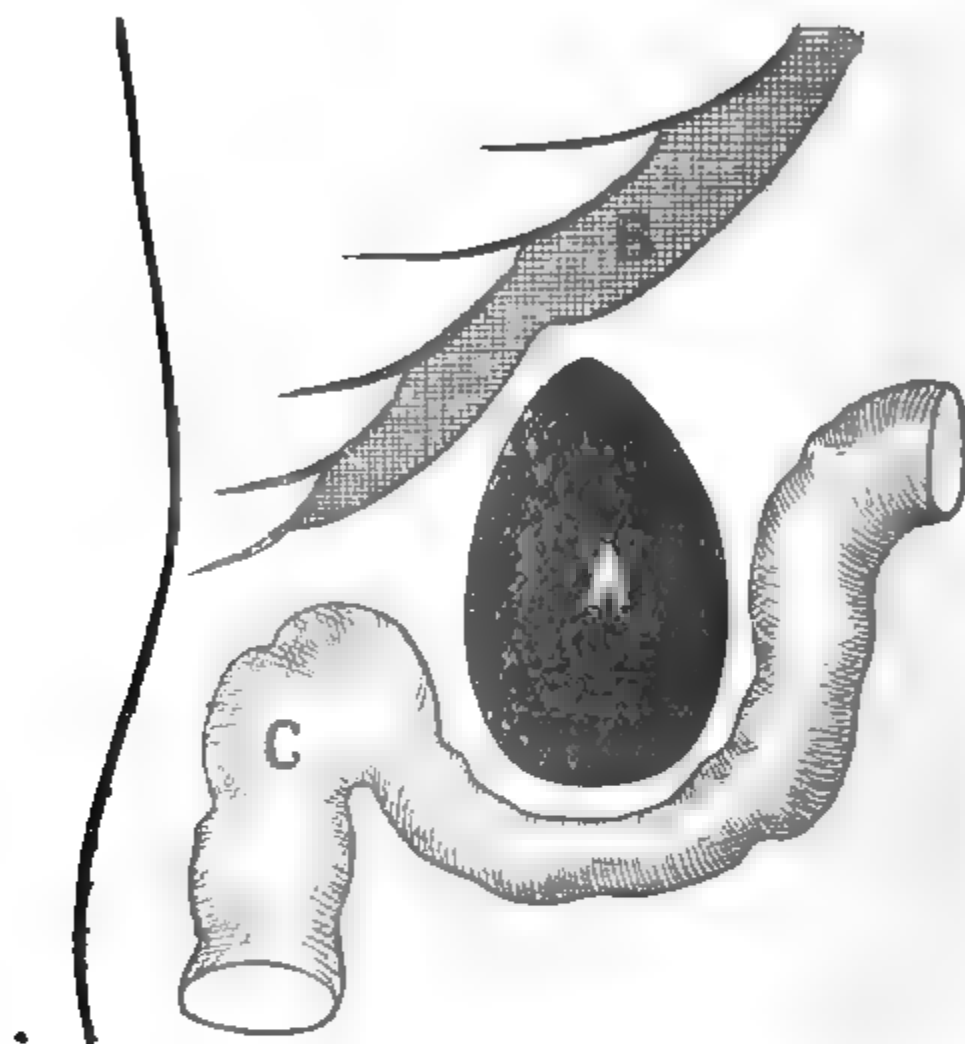


Fig. 5.

Flushing with sterilised water brought away calculi to the number of 104. One large stone was fixed in a pouch at the commencement of the cystic duct; this was crushed with a forceps, and removed by a blunt flushing scoop. The gall-bladder was fixed to the skin, the peritoneum sutured round its lower border and throughout the length of the wound with fine silk. The other layers of the abdomen were sutured with stout silkworm-gut.

For a time I had some anxiety about this case, as first the right, and afterwards the left leg swelled up, the veins in the groins being very much distended. This condition was relieved by purgation with salines, and recovery was then rapid and complete.



**ART. XXI.** — *Clinical Report of the Rotunda Lying-in Hospital for Three Years, from Nov. 1, 1893, to Oct. 31, 1896.* By WILLIAM J. SMYLY, M.D., F.R.C.P.I.; Master, Rotunda Lying-in Hospital; H. WILSON, L.R.C.S.I.; and HENRY JELLETT, M.D., M.Ch., Assistants.

(Continued from page 304.)

#### POST-PARTUM HÆMORRHAGE.

There were 49 cases of post-partum hæmorrhage, 28 of which were moderate and 21 severe; 41 were due to uterine inertia, 7 to lacerations of the soft parts, and 1 to a combination of both causes. Of the atonic cases, 10 were controlled by external manipulation and ergot, 6 by the hot douche; in 24 the hand was introduced to remove the placenta, membranes, or clots, 3 were plugged, including a case of uterine inertia with a deep cervical laceration, 2 were infused with saline solution.

M. C., delivered 15th July, 1894. Considerable post-partum hæmorrhage; hand introduced and partially adherent placenta removed, uterus continuing relaxed and a deep cervical laceration being discovered, uterus and cervix were plugged with gauze.

N. F., delivered 9th Feb., 1895. A considerable hæmorrhage during third stage. Hæmorrhage ceased after expulsion of the placenta, but the patient was greatly collapsed, with a thready pulse, 140 per minute; as she did not improve with the ordinary methods, two quarts of saline solution were infused with marked benefit. She left the hospital on the ninth day.

H. S., delivered 22nd Jan., 1895, at 2 30 a.m., of a seven months' child. There was some hæmorrhage after the birth which was easily controlled, but at 3 30 a.m. flooding was noticed again; a large quantity of blood and clots was expressed from the uterus, with a piece of membrane. Hot douching being found insufficient, the uterus was plugged with gauze and the vagina with moist cotton wadding. The patient was greatly collapsed and could retain nothing in her stomach. As her condition showed no improvement towards evening she was infused with saline solution; the pulse, which could not be counted before, now fell to 126. The plugs were removed at 12 30 p.m., and there was no further hæmorrhage. On the fourth evening her temperature rose to 104°

and the uterus was douched with creolin. The temperature continued irregular for four days, but steadily improved after that until the twelfth day, when it became normal and remained so until her discharge five days later.

M. K., delivered 17th May, 1895. The membranes were adherent and had to be removed by hand. The uterus was infested by a number of multi-nodular myomata. Hæmorrhage continuing in spite of hot douching the uterus and vagina were plugged with gauze as in the former cases. She had an irregular temperature for three weeks, but only once as high as  $101^{\circ}$ , and she ultimately left the hospital in good health.

Of the 7 traumatic cases 2 were due to laceration of the cervix, 3 were due to a tear in the vestibule, 1 to a deep vaginal laceration, and 1 to laceration of the perineum. They were all sutured. There was no maternal death.

#### RUPTURE OF THE UTERUS.

There was one example of this accident.

M. K., aged twenty-eight, 5-para, admitted 6th June, 1895, at 7 30 a.m. Labour had commenced at 6 a.m., and she had strong pains. At 11 45 a.m. the os was fully dilated; some blood had escaped per vaginam during the previous half hour, but ceased after rupture of the membranes. When six hours in the second stage forceps were applied, and a dead child delivered. The uterus contracted firmly, but failed to expel the placenta. All efforts to express it having failed, after fifty minutes the hand was introduced, and a laceration through the lower uterine segment and cervix was discovered in the posterior wall, through which the placenta had escaped into the abdominal cavity. Following the cord the hand was passed through the rent, and the placenta removed. A strip of iodoform gauze was passed through the tear, and left there for two days. That evening her temperature reached  $101.2^{\circ}$ , but was normal next morning. In the evening it was again  $101^{\circ}$ , and pulse 120. Next morning both had fallen to normal, and continued so until she was discharged on the 20th.

#### OVARIAN TUMOUR.

The cystic tumour, which was somewhat larger than the foetal head, was easily pushed up out of the pelvis at the commencement of labour, and gave no further trouble.

## MYOMATA.

H. S., aged forty-four, 3-para, admitted 28th April, 1894; nineteen years since birth of last child; uterus infested with multinodular myomata; labour very tedious; a large submucous myoma almost closed the os. The hand was passed into the vagina and two fingers into the uterus beyond the tumour. A foot, which fortunately was the presenting part, was seized, and by means of it extraction was effected with considerable difficulty. The child, which was macerated, weighed  $7\frac{1}{4}$  lbs. The mother made a good recovery.

E. B., aged thirty-eight, 1-para, admitted 12th February, 1894. Upon abdominal examination the uterus was found infested with myomatous nodules, the foetus presenting in the second position, with the head freely movable above the pelvic brim. Per vaginam, a tumour as large as a foetal head was found occupying Douglas' pouch, and encroaching upon the conjugate diameter to such an extent as to render the passage of the child impossible. The tumour was firmly fixed, so that it could not be pushed up out of the pelvis, nor could the presenting part be reached by the examining finger. Abdominal section was performed on Friday, May 4th, the uterus was drawn out and opened. The foetus extracted began to cry almost immediately. The removal of the tumour was difficult owing to firm adhesions of its upper third, which was covered with peritoneum, and to the extra peritoneal development of the lower two-thirds, necessitating careful enucleation. An elastic ligature was placed around the cervix below the tumour, and the latter, with the uterus, removed. The cervix was then extirpated per vaginam, the broad ligaments having been secured by clamps. A large mass of tissue was then found outside the clamp on the left side; it was drawn down, another clamp placed outside, and the mass removed, and upon examination was found to be a second uterus, which admitted a sound to the normal depth (the specimens were exhibited at the meeting of the Obstetrical Section of the Royal Academy of Medicine, Ireland, on Friday, May 18, 1894). Convalescence was delayed by thrombosis of the short saphenous vein of the left leg, but she ultimately left the hospital, with her infant, in good health.

Of the other cases 2 were subperitoneal myomata, which caused no trouble; 3 were interstitial multinodular myomata. Two of these women aborted, and 1, M. K., has been already reported as a case of post-partum hæmorrhage, and 1 with a submucous tumour aborted at the third month.

## DEFORMED PELVIS.

Twenty-one cases were reported, 2 of whom delivered themselves without assistance; 1 in which the child presented with breech required manual assistance; 4 were extracted with forceps, once the instrument was applied before the head had passed the brim, and three times for secondary inertia after it had entered the pelvic cavity; 9 were delivered after induction of premature labour, 3 by craniotomy, 1 by symphysiotomy, and 1 by Cæsarean section. Two mothers and 7 children died.

Name	Age	Para	Delivered	M	C	—
A. K.	28	5	17 Jan., 1894	R	A	High forceps
M. B.	33	4	26 Feb., „	R	A	Induction of labour
K. M.	36	6	14 March, „	R	A	Do do
N. C.	42	8	31 March, „	R	D	Low forceps
M. K.	23	4	1 June, „	R	D	Perforation of after-coming head
A. B.	29	5	5 August, „	R	D	Low forceps
J. S.	28	2	28 Oct., „	D	A	Cæsarean section
E. W.	37	9	23 Jan., 1895	R	A	Induction of labour
B. S.	27	5	3 Feb., „	R	A	Breech
K. M.	36	6	15 March, „	R	A	Induction of labour
M. K.	33	10	9 May, „	R	A	Do do
B. H.	26	4	4 June, „	R	D	Perforation
A. B.	40	9	15 Sept., „	R	A	Low forceps
M. D.	27	4	16 Sept., „	D	A	Induction of labour
E. M.	25	6	7 March, 1896	R	D	Do do
M. E.	25	4	9 March, „	R	A	Natural efforts
K. K.	33	4	15 May, „	R	D	Induction of labour
E. A.	23	4	17 June, „	R	A	Do do
M. B.	25	5	9 July, „	R	A	Symphysiotomy
M. N.	23	3	19 Aug., „	R	A	Natural efforts
S. K.	28	1	15 Oct., „	R	D	Perforation

CASE I.—A. K., aged twenty-eight, 5-para, admitted 17 Jan., 1894. Patient had been a long time in labour; waters had escaped 18 hours before admission, meconium escaping. The contraction ring was high up, and head above the brim. Foetal heart slow; os  $\frac{3}{4}$  dilated; large caput succedaneum; conjugate of brim,  $3\frac{1}{4}$  inches. A living child was extracted with considerable difficulty by forceps.

CASE V.—M. K., aged twenty-eight, 4-para, admitted 31st May, 1894. Her first two labours were terminated by craniotomy; the third, in the Rotunda Hospital, by induction of premature labour, and that child was still living. Although warned of the dangers attending delivery at term, she now presented herself in labour at full term, the breech presenting. All efforts to deliver the after-coming head were fruitless until after the child's death, when it was perforated and extracted.

CASE VII.—J. S., aged twenty-eight, 2-para. This patient had been delivered in the hospital by Cæsarean section in 1891. The conjugate of the brim measured  $2\frac{3}{4}$  inches, and the transverse  $4\frac{1}{4}$  inches. It was therefore a generally contracted flat pelvis. She was admitted to the Lying-in Hospital on Sunday, October 28th, 1894, having been some hours in labour. The operation was commenced late in the afternoon, and had to be finished by lamp-light, and to this I attribute the unfortunate result. Upon opening the abdomen the intestines were found adhering to the uterine cicatrix, and were pushed off with a muslin compress. The uterus was then opened, the child extracted, and the cord ligatured and divided. It was a male weighing six and a half pounds, and began to cry immediately. The placenta and membranes were removed, and the wound closed with silk sutures. The intestines were carefully examined, but a small pin-hole opening was not discovered until the *post-mortem* examination. The abdominal wound was closed, and the patient put to bed. She died on the third day from escape of fæcal matter into the abdominal cavity; the child survived.

CASE XII.—B. H., 4-para, admitted 16th May, 1895. May 29, bougies inserted and changed daily until June 2. Barnes' bags were then inserted and the os dilated. June 3, membranes ruptured. Next morning the head was still above the brim, the contraction ring a hand's breadth above the pubes, no foetal heart, meconium coming away, large caput succedaneum. Version being impossible, and the child evidently dead, the head was perforated and extracted with Anvard's cranioclast. The placenta was adherent and had to be removed manually. She made a good recovery.

**CASE XIV.**—M. D. died of septicæmia and is reported under that heading.

**CASE XVII.**—K. K., first two children stillborn, three craniotomised, c.v. 9 cm. Labour induced by Krause's method; labour did not set in for some days; pains infrequent and inefficient; podalic version; child astride the cord; died during extraction.

**CASE XIX.**—M. B., 5-para. Her first three children were stillborn, probably perforated, but of this she was uncertain. The fourth was saved by induction of labour in this hospital. She was now at full term. When the os was nearly dilated symphysiotomy was performed, the funis prolapsed, when the membranes ruptured. The child was turned and extracted without much difficulty; she made an excellent recovery. There was no abnormal mobility of the symphysis, and no trouble in walking. She left the hospital with her baby in excellent health on the 29th of August.

**CASE XXI.**—S. K., aged twenty-eight, 1-para. On admission os size of half-crown. Large caput succedaneum on head which was freely movable above the brim; promontory easily felt, c.v. 7 cm.; waters had long escaped; meconium coming away; no foetal heart; perforation.

#### LABIAL THROMBUS.

There were two cases:—

**CASE I.**—E. B., aged twenty-three, 1-para, admitted Feb. 4, 1895. Labour commenced at 6 30 p.m. on the 3rd. At 10 a.m. next day a swelling was noticed in the left labium, which rapidly increased in size until it was as large as a foetal head, distending the labium, bulging the vaginal wall inwards, and extending across the perineum. She was immediately sent into hospital and delivered with forceps. During delivery the tumour ruptured, and the perineum was lacerated. The rent extended up the vaginal wall almost to the lateral fornix; two large veins were ligatured, and the cavity plugged with iodoform gauze, which was removed after twenty-four hours; she made a good recovery.

**CASE II.**—M. M., aged thirty-four, 7-para, admitted August 31, 1896. She was delivered naturally. Shortly after delivery she complained of very severe bearing down pain, "just like the head coming through." The left labium was swelled to the size of a turkey's egg, the inner aspect of a dark purple colour, and very tender to the touch. A  $\frac{1}{4}$ -grain of morphia was given hypodermically, and a compress applied to the vulva. Next morning the tumour had increased in size, and at 12 30 it burst with profuse

hæmorrhage; the rupture was found on the inner side of the labium. The cavity was freely laid open, clots turned out, and some bleeding points secured by suture. It was then well washed out with hot creolin lotion, and plugged with iodoform gauze; the vagina was also plugged with gauze and moist cotton wool, and a large pad applied to the vulva and secured by a T bandage. The patient, who was very collapsed, was treated by a hypodermic injection of strychnia, hot nutrient enema, and raising of the foot of the bed. She made a good recovery, and left the hospital in good health, excepting phthisis pulmonalis, from which she had previously suffered.

#### FORCEPS.

Forceps were used in 117 cases, *i.e.*, once in 34 deliveries. The indications for their use were as follows:—

		1893-94	1894-95	1895-96
Delay in second stage	-	30	27	41
Rise in temperature	-	1	1	0
Rise in pulse	-	0	2	1
Slowing of foetal heart	-	8	1	2
Prolapse of funis	-	1	0	0
Accidental hæmorrhage	-	1	1	4
		<hr/>	<hr/>	<hr/>
		41	32	40

Of these 87, or nearly three-fourths, were primiparæ. The ages of the primiparæ were:—

Between 17 and 25 years	-	29
25 „ 30 „	-	36
30 „ 35 „	-	19
35 „ 43 „	-	3

In one case only was the instrument used before the head had passed the brim of the pelvis—that is, one high forceps in 4,006 deliveries; it is reported under pelvic deformity. Two mothers died—1 in 2,003.

#### CRANIOTOMY.

Three children were perforated; they were all dead, and have been reported under cases of pelvic deformity.

## VERSION.

Was performed 42 times—12 times for shoulder presentations, 18 times for placenta prævia, twice for accidental hæmorrhage, twice for pelvic deformity, and 8 times for prolapse of funis.

## ECLAMPSIA.

There were nine cases of eclampsia, five of which were ante-, two intra-, and two post-partum. Three of the mothers and four of the children died. One of the mothers went out undelivered and did not return.

Name	Age	Para	Delivered	M.	C.	Time of Onset
C. T.	34	6	4 Feb., 1894	R	D	Ante partum
M. M.	28	1	5 April, „	R	D	„
E. B.	33	1	24 Oct., „	R	?	„
M. H.	19	1	23 Dec., „	D	A	Post partum
E. S.	—	—	Not	D	—	Ante partum
M. B.	29	3	12 Oct., 1895	D	D	„
S. M.	28	1	28 April, 1896	R	A	Intra partum
E. C.	17	1	27 May, „	R	A	Post partum
K. W.	35	5	10 July, „	R	D	Intra partum

CASE I.—C. T., aged thirty-five, 6-para, admitted January 13, 1894, in convulsions. Urine scanty, contained blood, and became almost solid on boiling. Between the fits she was semi-conscious, restless, and rambling. An enema was administered, and  $\frac{1}{2}$  grain morphia hypodermically. She had four fits during the following four hours when another  $\frac{1}{2}$  grain morphia was administered, after which she slept soundly for some hours. She regained consciousness next day and had no more fits; was kept on milk diet until the 18th, when she left the hospital. She was re-admitted on the 4th of February, and was delivered by the natural efforts of a macerated foetus which presented with the breech. She made a good convalescence, and was discharged on the 10th.

CASE II.—M. M., aged twenty-eight, 1-para, admitted March 31,



1894. She had had five fits before admission. Her urine contained blood and a large quantity of albumen. Half a grain of morphia was administered hypodermically and repeated every fourth hour until she had had gr.  $1\frac{1}{2}$ . Labour did not set in until mid-day on April 5th, and she was delivered after seven hours of a dead macerated foetus. In the meantime she had been restricted to milk and had no more convulsions.

CASE III.—E. B., aged thirty-three, 1-para, admitted 27th September, 1894, in convulsions. She was six months pregnant, and her urine was scanty and highly albuminous. She was given mist. sennæ co.  $\mathfrak{z}$ ijj., and when the fits recurred, morphia  $\frac{1}{2}$  gr., which was repeated in four hours. She had no more fits, and having been kept for three weeks on milk diet, she went out undelivered, and did not return.

CASE IV.—M. H., 1-para, aged nineteen, admitted 23rd December, 1894, and was delivered, after nineteen hours, of a living child. Her urine was highly albuminous. Next morning she was seized with a violent eclamptic fit, and was given morphia  $\frac{1}{2}$  gr. She had four more fits before 3 p.m., when she got another  $\frac{1}{2}$  grain of morphia, after which she had no more fits. At 12 30 a.m. her temperature began to rise; at 2 a.m. it was  $102^{\circ}$ , and at 6 a.m.  $104^{\circ}$ . She discharged a large quantity of foetid pus through her mouth and nose, became comatose, and died at 8 30 a.m. Unfortunately a *post-mortem* examination could not be obtained.

CASE V.—E. L., admitted Feb. 9, 1895. Had had several convulsions, was comatose on admission, and died two hours after undelivered.

CASE VI.—M. B., aged twenty-nine, 3-para, admitted October 11, 1895. Seven months pregnant; advanced Bright's disease; had had severe vomiting for past five months; was greatly emaciated; no œdema of feet or legs; urine dark-coloured, half albumen, contained bile pigment. The liver was enlarged, and the breath had a urinous odour. Convulsions set in at 5 p.m. on October 12. She was given a hot bath and ol. crotonis 1 gr. She had another fit at 11 p.m., when she got  $\frac{1}{2}$  grain of morphia. She became comatose, and died at 2 45 the next morning undelivered.

CASE VII.—S. M., aged twenty-eight, 1-para. On admission (April 26, 1896) her feet and legs were very œdematous; urine contained a large quantity of albumen; was given mist. sennæ co.  $\mathfrak{z}$ ij. At 12 25 a.m. on the 26th she had an eclamptic fit, and was

given  $\frac{1}{2}$  grain of morphia. She had four fits before 4 20, when the morphia was repeated. She had two fits before 10 a.m., when she got a third dose of morphia,  $\frac{1}{4}$  grain. After this she had no more fits. The child was born alive at 2 50 p.m., and both left the hospital on the seventh day.

**CASE VIII.**—E. C., aged seventeen, 1-para, admitted May 26, 1896. Was delivered at 2 50 of a living child, after a natural labour of seven hours. Urine scanty, dark coloured, highly albuminous. She was given pulv. jal. co. 3i., with calomel gr. 5. At 6 45 a.m. the next morning she had an eclamptic seizure, and was given morphia. She had a second at 7 5, after which she had no more, and made a good recovery.

**CASE IX.**—K. W., aged thirty-five, 5-para, admitted July 18, 1896, in the second stage of labour. Two hours after admission had an eclamptic seizure. Forceps were applied, and a dead child was extracted. The urine was examined, and found to contain blood and a large quantity of albumen. She made a good recovery.

#### MORBIDITY.

There were 172 cases in which the temperature rose above  $100\cdot8^{\circ}$  F., i.e., 1 in 23·2.

There were 2 cases of physometra, the result of antepartum putrefaction, one of which died.

**TABLE showing number of Cases with rise of Temperature above  $100\cdot8^{\circ}$  F.**

—	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	—
100·8° but under 102·2°	1	3	4	3	—	3	—	6	1	5	4	3	1893-4
	5	9	4	4	3	5	1	5	5	4	1	1	1894-5
	1	—	3	3	4	1	4	4	1	—	2	3	1895-6
102·2° but under 104°	4	3	2	—	1	1	1	2	—	1	5	2	1893-4
	1	2	—	1	4	1	—	2	—	1	—	1	1894-5
	—	3	2	4	1	—	—	—	2	2	2	—	1895-6
104° but under 105°	—	—	—	—	—	—	—	—	—	1	1	2	1893-4
	1	1	3	—	—	1	—	1	—	1	1	—	1894-5
	—	—	—	1	—	—	1	—	—	—	—	—	1895-6

TABLE showing Months of Greatest Morbidity.

—	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Total
1893-4	5	6	6	8	1	4	1	8	1	7	10	7	59
1894-5	7	12	7	5	7	7	1	8	5	6	2	2	69
1895-6	1	3	5	8	5	1	5	4	3	2	4	3	44
	18	21	18	16	13	12	7	20	9	15	16	12	

## DEATHS.

Name	Admitted	Delivered	Died	—
1893-1894				
1 M. D.	13 Nov.	15 Nov.	20 Nov.	Uræmia
2 K. C.	20 Dec.	29 Dec.	5 Jan.	Septicæmia; child putrid
3 E. D.	19 Feb.	19 Feb.	24 Feb.	Chronic Bright's disease
4 M. K.	18 Aug.	18 Aug.	19 Aug.	Acute septicæmia
5 K. K.	15 Aug.	16 Aug.	19 Aug.	Hyperemesis
6 E. H.	1 Oct.	Not	6 Oct.	Threatened abortion; septicæmia
7 J. S.	28 Oct.	28 Oct.	30 Oct.	Cæsarean section; per- foration of intestine; peritonitis
1894-1895				
1 A. C.	13 Dec.	11 Dec.	27 Dec.	Incomplete abortion; pyæmia
2 M. H.	13 Dec.	23 Dec.	25 Dec.	Eclampsia
3 E. L.	9 Feb.	Not	9 Feb.	Nephritis
4 C. H.	24 June	1 July	2 July	Bright's disease
5 E. D.	31 Aug.	Not	3 Sept.	Morbus cordis
6 M. B.	11 Oct.	Not	13 Oct.	Bright's disease; uræmia
1895-1896				
1 M. D.	15 Feb.	17 Feb.	25 Feb.	Induced labour; pyæmia

From the above table it will be seen that of the 14 deaths 7 occurred in the first, 6 in the second, and only 1 in the third year. This is, so far as I know, a record year in the annals of the Lying-in Hospital. Of these deaths 6 were due to septicæmia, 6 to kidney diseases, 1 to hyperemesis, and 1 to morbus cordis.

The six septic cases were as follows :—

CASE I.—K. C., aged thirty, admitted 20th Dec., 1893. Labour set in on the 27th, and waters shortly afterwards escaped. The labour was very tedious from uterine inertia. On the 29th her temperature rose to  $103\cdot4^{\circ}$ . She was then in the second stage, so forceps were applied and a putrid foetus was extracted. During extraction a quantity of foetid gas escaped from the uterus. The placenta was adherent, and after the uterus had been douched out with creolin lotion it was removed manually. Next morning her temperature had fallen to  $99^{\circ}$ , but in the evening it rose to  $103\cdot6^{\circ}$ . The uterus was again douched out and scraped with Rheinstädter's curette and an iodoform pessary placed in the cavity. She died of septicæmia on the eighth day.

CASE II.—M. K., aged twenty-seven, 1-para, admitted 18th Aug., 1894. She had been about twenty hours in labour at her own home, where she was frequently examined and her vagina twice douched out. She had a severe rigor, and her temperature rose to  $104^{\circ}$ . She was then sent into hospital. On admission her temperature had fallen to  $99^{\circ}$  but her pulse was 135. She was immediately delivered with forceps and her uterus was douched with creolin. She died at 6 30 in the morning, nine hours after admission. The autopsy revealed nothing abnormal, but the case was evidently one of acute septicæmia.

CASE III.—E. H., aged twenty-seven ; six months pregnant ; had been frequently plugged during the month previous to her admission to hospital, for profuse and recurrent hæmorrhages. Her case has been already fully reported under abortions.

CASE IV.—J. S. Reported under Cæsarean Section.

CASE V.—A. C., aged twenty-eight, 13-para, four and a half months pregnant. Had had severe hæmorrhage for ten days before admission, and the foetus, she told us, had escaped five days before. The rest of the ovum was expressed soon after admission, and the uterus washed out. Six hours later she had a severe rigor, and her temperature rose to  $104^{\circ}$ . Next day, her temperature con-

tinuing high, the uterus was curetted with Rheinstädter's flushing curette and drained with iodoform gauze, but without benefit, and she died on the twentieth day.

CASE VI.—M. D., aged twenty-seven, 4-para, admitted 7 Feb., 1895. This patient had been delivered on three previous occasions with great difficulty, owing to pelvic deformity. The pelvis, measured with Skutsche's pelvimeter, showed a true conjugate of 3 inches, and transverse  $4\frac{3}{4}$  inches. Premature labour was induced without any difficulty by Krausse's method, but on the following day her temperature rose to  $102.4^{\circ}$ . She was douched out with creolin lotion. On the 5th day she had a rigor followed by profuse sweating. She was douched again and curetted with Rheinstädter's curette. During the night she became wildly maniacal and died on the 7th day.

The other fatal cases were as follows:—

M. D., aged twenty-four, 2-para, admitted November 13, 1893. Had been seriously ill for three weeks previously with general anasarca. On admission she was semi-conscious, and so helpless that she could not walk, passed urine and fæces under her, and the day after had severe hæmorrhage from the bowels. No vaginal examination was made at any time during her stay in hospital. On November 15 she was delivered naturally of a macerated foetus. On the third day her temperature suddenly rose to  $103^{\circ}$ , but sank in twelve hours to normal and did not rise again. She died of uræmia on the 6th day.

E. D., admitted February 19, 1894, 1-para. Had suffered for a long time from chronic Bright's disease. On admission she was hemiplegic and aphasic, and had been so for three months. She had also a violent cough and dulness on percussion, with bronchial breathing over the right lung. Her urine was loaded with albumen. Delivered the same day, by the natural efforts, of a living child. She died on the 5th day.

E. L., admitted February 9, and M. W., admitted Dec. 23, 1894. Have been detailed under eclampsia.

C. H., M. B., and K. K. have been reported under hyperemesis.

E. D., aged thirty-six, admitted August 31, 1895, with aortic valve disease, from which she died on the 3rd of September. She happened to be three months pregnant.

ART. XXII.—*Cancer of Œsophagus with Secondary Growths perforating the Trachea and the Right Subclavian Artery.\**  
By JOHN WILLIAM MOORE, M.D., B.A. Univ. Dubl.;  
F.R.C.P.I.; Fellow of the Royal Medical and Chirurgical  
Society; Senior Physician to the Meath Hospital;  
Professor of Practice of Medicine, Royal College of  
Surgeons in Ireland.

QUESTIONS of diagnosis are always of interest—never more so than when the seat of disease is one of the great cavities—the skull, the thorax, or the abdomen. In the case I am about to record, a cancerous growth caused pressure symptoms within the thorax so closely resembling those of aneurysm of the terminal portion of the arch of the aorta as to lead me to a wrong diagnosis of that lesion. Sudden death by profuse hæmorrhage seemed to confirm the diagnosis, which was entirely overthrown by the *post-mortem* examination. The case is as follows:—

*Clinical History.*—James C., aged fifty-six years, by trade a corkcutter, was admitted to the Meath Hospital on Monday, the 4th of October, 1897. The following are the notes of the case taken by Mr. Mervyn Falkiner, my clinical clerk at the time:—

“About six months previously the patient, on getting up one morning, noticed that he was hoarse. He could offer no explanation of this symptom. His appetite began to fail, and he had a considerable amount of difficulty in swallowing. About three months afterwards he got a cough and spit, which he compared to the yolk of an egg. This was sometimes mixed with a little *red* blood. During all this time his dysphagia increased, till, at the time at which these notes were taken, he was unable to swallow solid food at all, and took a long time to drink a cupful of fluid. Last week he came to hospital as an extern patient, and had a bougie passed down his œsophagus, which relieved him greatly.

“October 8th.—Sonorous rhonchi and sub-crepitant râles are heard at the left base, with puerile breathing. There are no signs on inspection, palpation, or percussion. The expectora-

\* Read before the Pathological Section of the Royal Academy of Medicine in Ireland, on Friday, March 25, 1898.

tion is now more abundant, and contains a larger quantity of blood. Circulatory system is apparently normal.

“October 30th.—The sputum is now foetid, and there is a horrible smell from the breath. Some small pieces of lung tissue have been found in the sputum. Apparently a localised gangrene is present. Eyes—the pupils differ in size; the right pupil is small, the left is large. This sign has been constant. There is laryngeal stridor; it occurs with inspiration. The left pulse is smaller than the right. Dr. Lane Joynt examined the case with a laryngoscope, and found the left vocal cord paralysed. He also took a skiagram, which was one of the best I ever saw; but it does not show any definite sign of a tumour.”

The following notes of the case from Nov. 1st, 1897, were taken by my clinical clerk, the late Mr. Valentine Walker:—

“The patient's appearance gives no indication as to the nature of his complaint, his face being full and well nourished, his complexion, however, is pale and pasty, and rather suggestive of renal trouble. The most noticeable thing about him is the stridulous breathing; it is not, however, very marked except on exertion; he speaks in a hoarse whisper, but his articulation is distinct; he has difficulty in swallowing, but can manage a little solid food; his appetite is fair. On inspection of his chest nothing particular is seen, it is perhaps a little enlarged in the upper half, suggesting emphysema; on palpation nothing is apparent. On percussion no localised area of dulness can be made out. On auscultation rhonchi are heard and puerile breathing, especially over the left lung. The heart sounds are normal and are not conducted abnormally.

“The left pulse is said to be smaller than the right, but this is doubtful. I examined for laryngeal tugging but it was not present. He was given creasote every fourth hour. This has relieved the breathing and reduced expectoration, and the breath is no longer foetid.

“His diet consists of milk, two egg-flips, chicken or mutton, and 4 ozs. of whisky.

“He left the hospital and went home on November 22nd, 1897, but was re-admitted on December 4th at his own urgent request. He had never left his bed since leaving the hospital, and looked a good deal worse, though he did not seem to have lost much flesh. The breathing was difficult and stridulous, and his voice

was very hoarse; loud rhonchi and coarse râles were present, and expectoration was fairly abundant, and it was sometimes tinged with blood. Swallowing is more difficult and the appetite is worse. Double meiosis is present. The breath is foetid. He was again put on creasote and turpentine capsules; this improved the breath and the foetor diminished.

“About the 10th of December he lost all appetite for food. He could give no reason for this; he did not feel sick, but food that he tried to swallow always came up again after a few minutes. This loss of appetite was the only symptom that distressed him. All this time he never complained of any pain. The only thing he took from this time till his death was whisky.

“He complained of a ‘draw’ in his breathing, as he described it.”

Mr. Walker adds:—

“I saw him last alive on Wednesday, the 22nd, on my night round; he was asleep and looked as usual. I had not noticed any particular change in him. He was sitting in a chair at the fire on Tuesday night.

“He died on Thursday morning at five o’clock from profuse hæmorrhage.”

The following notes of the autopsy were taken by Mr. Walker:—

“*Post mortem*.—The body was not wasted, but looked well nourished; there was no external evidence of a tumour. On making the usual incision there was a large amount of adipose tissue. The sixth costal cartilage on both sides was ossified, the others were not. When the thorax was opened, the right lung was seen to stretch right across the middle line, and was emphysematous-looking; it did not collapse. The pericardium was not visible, and only a small part of the upper lobe of the left lung, which was full of blood and deep red in colour, came into sight. When separating the right lung slight recent adhesions were met with; having removed it, the heart was found to be unusually small and contracted.

“A tumour could now be felt blocking up the inlet of the thorax; it was hard and nodular. To remove this the first rib and right clavicle had to be cut through. I then removed the larynx, trachea, œsophagus, heart and great vessels, and the left lung *en masse*. The tumour was found to be situated round the innominate artery, and in the posterior wall of the trachea the



œsophagus was adherent and somewhat constricted, but not perforated. Another tumour was felt in the œsophagus about an inch above the diaphragm; the finger could not be passed through here.

“The left lung was firmly adherent, especially to the diaphragm, and was greatly congested. On opening up the trachea about an inch below the larynx, and on the posterior wall, a large perforation was found with irregular necrosed walls and surrounded by a cancerous growth. This growth surrounded the innominate artery and the origin of the right carotid and subclavian arteries. On opening these a number of small perforations were found which opened into the hollow of the cancerous ulcer. These were situated in the right subclavian artery, just beyond its origin. The tumour on the lower end of the œsophagus was hard and nodular, and had constricted it greatly. The upper tumour occupied the thoracic inlet so fully that the first finger could not be forced up under the sternum.”

I am indebted to Professor A. C. O'Sullivan, Fellow of Trinity College, Dublin, for the following note of the macroscopic and microscopic appearances in the case:—

“A tumour was found in the œsophagus commencing an inch below the level of the bifurcation of the trachea, extending downwards for 2 inches, and  $\frac{3}{4}$  in. thick in its thickest part. It passed round the posterior and lateral walls, leaving a strip  $\frac{1}{2}$  in. wide free on the anterior wall. It was deeply ulcerated in the middle, and a superficial ulceration extended from it downwards, ending sharply by an irregular line which divided it from the normal epithelium.

“Along the left side of the œsophagus was a chain of lymph glands, hard, enlarged, and evidently infected by the tumour. They had been cut away at the level of the bifurcation, and could not be traced further.

“On the right side, commencing about an inch above the bifurcation and extending to the level of the cricoid cartilage, was a second tumour-mass 3 in. long, and about  $1\frac{1}{2}$  in. in cross diameter, nodular and hard, which was partly composed of infiltrated lymph glands, and involved the lower part of the thyroid gland. This mass surrounded the right and posterior walls of the trachea, passing between it and the œsophagus. It also surrounded the innominate artery and the origins of the right subclavian and common carotid, except in front. The

large veins passed free in front of it, and the vagus nerve passed through the mass, showing a bulbous swelling just before entering it. (This was not examined microscopically.)

“The œsophagus was closely connected with the mass, but not involved in the growth. It was puckered-in in one spot, and had two small superficial ulcerations near that spot.

“In the posterior wall of the trachea there was a large hole,  $\frac{3}{4}$  in. by  $\frac{3}{4}$  in., the floor of which was formed by the tumour.

“On the right wall, close to this, was another smaller perforation, which was filled with blood-clot and communicated with a perforation at the origin of the right subclavian artery. This perforation, also filled with clot, was  $\frac{1}{2}$  in. by  $\frac{1}{2}$  in.

“Round these perforations the mucous membrane of the trachea was irregularly swollen and ulcerated, and this condition extended for some distance upwards and downwards. Microscopic examination showed both growths to be squamous cancer.”

*Remarks.*—I am free to admit that the result of the *post-mortem* examination in this case greatly surprised me. The absence of anything resembling cancerous cachexia or of any constitutional disturbance, and the presence of a whole group of pressure symptoms, led me to the belief that the lesion was most likely an aneurysm of the terminal portion of the arch of the aorta pressing backwards and to the left. The laryngeal stridor with paralysis of the left vocal cord pointed to pressure on the recurrent laryngeal nerve; the dysphagia, to pressure on the œsophagus; the bronchial catarrh and dyspnœa, to pressure on the left bronchus; the recurrent appearance of foetid breath and expectoration, to pressure on the nutrient vessels of the left lung.

It is true that the physical signs of thoracic aneurysm were wanting. There was no marked area of dulness on percussion, or fulness, or tumour, or area of pulsation, excentric and distensile in character; or localised area, in which sounds resembling those of the heart were audible. But “it has been aptly said that aneurysms of the ascending aorta were those of physical signs, while aneurysms of the transverse arch were those of symptoms” (Horace Parsons).<sup>a</sup> Dr. Stokes, also, in his masterly Treatise on Diseases of the

<sup>a</sup> Medical Record, New York, Feb. 19, 1898, page 267.

Heart and Aorta,\* makes the following pertinent observations:—

“As the two most common forms of intrathoracic tumour are those of aneurysm and of cancer, and as all the symptoms of excentric pressure are more or less common to the two diseases, the rule is easily derivable that an intrathoracic tumour having been discovered, the diagnosis will be between aneurysm and cancer. As the first of these affections, however, is so much more frequent than the second, the chances will be greatly that in any given case of intrathoracic tumour the disease is aneurysmal.

“But I have already shown that a cancerous tumour may not only produce all the symptoms which we observe in aneurysm as proceeding from compression of surrounding organs, but that it may exhibit a diastolic pulsation, accompanied by a distinct bellows murmur. As might be expected from the rarity of the disease, our experience of those cancers which simulate aneurysm is as yet but limited. I am aware, however, of two cases of cancerous tumour—the one presenting only the signs of surrounding pressure, without pulsation or murmur; the second having the latter signs, in addition to those of pressure on surrounding parts.”

#### PICRIC ACID POISONING BY EXTERNAL USE.

M. LATOUCHE (*Gazette des Hôpitaux*), in two cases of burns occurring in children, aged four and nine years respectively, dressed the sores with a saturated solution of picric acid in water. The first two dressings gave pain, and the solution was replaced with an ointment containing 10 per cent. of picric acid. The dressing caused “atrocious” pain, vomiting, prostration, and black albuminous urine, in which picric acid was found.

#### UNUSUAL CAUSE OF HERNIA.

M. LATOUCHE (*Gazette des Hôpitaux*), a few days after puncturing a hydrocele of the cord in an infant, was called to see his patient, who was suffering from a strangulated hernia. On cutting down on the inguinal opening he found that a loop of small intestine had passed through the opening made by the puncture, and was strangulated in the vaginal peritoneal sac.

\* Dublin: Hodges & Smith. 1854. Page 603.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England. Part I.—1895. Ditto, Part II.—1897. Presented to both Houses of Parliament.*

(Continued from p. 317.)

[THIRD AND FINAL NOTICE.]

The subject of the relation between occupation and death-rate is one of deep interest, especially in England, where the occupations of the people are so varied, and carried on under such diverse circumstances. Dr. Tatham deals with the subject under the heading, "Mortality of Men engaged in different Occupations," dealing only with those of 15 years and upwards; females are altogether excluded from the inquiry for two reasons: "first, the uncertainty attaching to the statements of female occupations, both in the Census returns and in the death registers; and secondly, the fact that while 94 out of every 100 males at these ages [15 and upwards] are returned as following more or less definite occupations, only 38 out of every 100 females at the same ages are so returned."

Dr. Tatham refers to Dr. Farr's first attempt to deal with this subject, and continues:—

"Dr. Farr based the calculations in his first Supplement on the numbers living in 1861, and the deaths in 1860 and 1861; and the calculations in his second Supplement partly on the numbers living and the deaths in 1871, and partly on a combination of the two sets of facts. Dr. Ogle's calculations ten years later were based on the census population in 1881 and the deaths in three consecutive years 1880-81-82. In the following pages I have set out the details of mortality in the three years 1890-91-92, and in so doing I have taken frequent opportunities of comparing recent experience with the experience of earlier years.

"In Dr. Farr's two Decennial Supplements the mortality of men engaged in several industries was considered *in relation to age only*; no attempt having been made to treat of the *causes of death*."

In 1880-82 Dr. Ogle attempted with very considerable success to carry his work a step beyond Dr. Farr, but owing to the magnitude of the task had to confine himself to abstracting from the registrars "'considerable samples' of the causes of death in several industries, and divided out the total mortality of each industry among these causes according to the proportions existing in the respective samples. In this way Dr. Ogle was able to prepare the valuable tables on 'Causes of deaths of Males in different Industries,' which illustrated his decennial report."

When the next Census period came round Dr. Ogle determined to take another step in advance. The preparation of the material for this purpose is thus divided by Dr. Tatham, and will give some idea of the magnitude of the work entered upon by Dr. Ogle, and continued by Dr. Tatham:—

"With the help of a portion of the census staff, he caused to be extracted from the death registers on separate slips of paper the age, the occupation, and the registered cause of death of every male over 15 years of age who had died in England and Wales in the three years 1890-92. The slips, more than half a million in number, were then examined by clerks who had been employed in classifying occupations for the Census Report, and each slip was distinctly marked with the heading under which the occupation should fall. This stage had been reached by the end of 1893, at which time I succeeded Dr. Ogle in this office, and consequently became responsible for the remaining processes of the work.

"At the outset, thanks to the forethought of Dr. Ogle, I found myself in possession of a mass of statistical material on the subject of occupational mortality more copious than any that had been at the command of previous inquirers. In determining the uses to be made of this material, it was at once seen to be of the first importance for purposes of comparison that the methods adopted should be as nearly as possible identical with those which had been employed by my predecessors, and that any alterations in the form of tables should partake mainly of the nature of developments. Dr. Ogle had classed the causes of death under thirteen headings—alcoholism, liver disease, gout, phthisis, diseases of the nerves, circulatory, respiratory, digestive, and urinary

systems, plumbism, accident, suicide, and 'all other causes.' After careful consideration I determined to increase the number of headings to twenty-four by distinguishing valvular disease of heart and aneurysm from other circulatory diseases; bronchitis, pneumonia, and pleurisy from other respiratory diseases; hernia from other digestive diseases; Bright's disease from other urinary diseases; and by separating influenza, rheumatic fever, cancer, and diabetes from 'all other causes.' The task of marking the half million slips in such a manner as to indicate clearly to which of the twenty-four headings each cause of death belonged, could, of course, be entrusted only to responsible persons possessing special knowledge and experience."

The marking and sorting of these slips was the main cause of the delay (to which we have already referred) in publishing Part II. of this Report.

The following extract shows the great care and ingenuity which has been exercised in arranging the material before Dr. Tatham proceeded to make tabular statements and draw conclusions:—

"There is abundant evidence to show that the mortality of men similarly employed is powerfully influenced by conditions of occupation, which for the most part prevail locally. With the object of learning something concerning the extent of that influence, whilst at the same time avoiding undue elaboration of detail, I adopted the following plan. As a preliminary to sorting, the slips belonging severally to London, and to certain groups of counties and districts, the populations of which are mainly engaged either in industrial, in agricultural, or in mining occupations [a foot-note gives the district], were separated from those belonging to the remaining parts of the country. Provision having been made for the fact that some of these groups overlap one another—for example, that some districts in distinctively mining counties are the seats of other industrial occupations also—the work of sorting was commenced. The slips belonging to each group of districts were arranged, in accordance with the marking already explained, in rather more than 400 parcels, corresponding to the extended list of occupations in the Census Report. To prepare complete mortality statistics for each of these occupations was obviously out of the question. My predecessors had selected for special notice some of the more definite industries, and had arranged others in groups, thus bringing the total number of headings within manageable limits. By a slight modi-

fication of Dr. Ogle's plan, I prepared a list of 100 separate headings, which included the whole of the occupations, and the assorted parcels of slips were then arranged under these headings, in readiness for the final sorting by age and by cause of death. On the completion of this final sorting the slips were counted and the numbers entered on sheets prepared for the purpose; and, finally, by adding together all the sheets belonging to each of the occupational groups, the tables [appended to the Report] were produced. In this manner the mass of detached facts, representing in the aggregate more than half a million deaths, have been reduced to tabular form, and adapted to the purposes of statistical investigation."

From the extracts which we have given it will be observed that the work of building up this important statistical structure, regarding the relation between occupation and mortality, has been going on for upwards of 30 years, and has not yet, in our opinion, reached a stage commensurate with its importance. This branch of the work, which has gradually been developed in the hands of Drs. Farr, Ogle, and Tatham, is most valuable, but surely it should not have taken 30 years to bring it into its present far from perfect condition.

With regard to the years (25-65 being those adopted) of greatest capacity for effective work, the following remarks are extremely interesting and well put:—

"Dr. Farr, in his Supplement to the 35th Report, indicated the period of life between 25 and 65 years of age as that in which 'the influence of profession is most felt.' Ten years later Dr. Ogle adopted the same view, supporting it by the argument that 'in the earlier age-periods the effect of occupation is not as yet fully developed; and the last age-period, 65 years of age and upwards, is that which is more especially affected by the . . . retirement from the industry of such men as have become too weakly to follow it.' My own recent inquiries having tended to confirm the opinion expressed on this subject by my predecessors, I have, in the present volume, retained the same interval—namely, that between 25 and 65 years of age, as marking the period of life during which the effects of occupation are most conspicuous. In the case of the majority of industries this is generally held to be the term of years which almost accurately measures the duration of man's greatest capacity for effective work. There are, however, several industries in which this is by



no means the case. The learned professions, for example, furnish striking exceptions ; for, apart from the fact that save in rare instances the highest positions, whether in the church, in the law, or in medicine, are attained only by persons who have passed the meridian of life, it is assuredly true that much of the most useful work of our clergy, our lawyers, and our medical men, is done subsequently to their sixty-fifth year. On the other hand, with respect to many occupations which demand continuous and exhausting bodily labour the case is again different. Miners, cotton spinners, and some other workers begin the actual task of bread winning earlier in life than most other males do ; and it is certain that, as a rule, their ability to labour profitably begins to decline at an earlier stage. Consequently it may safely be assumed that the working period both commences and terminates at an earlier date in the industrial occupations than it does in the learned professions. It is obvious then that no fixed term of years can indicate with precision the limits of working power for every occupation. The age-group 25-65 years, however, presents as fair a compromise as any that can be devised."

Dr. Tatham then refers to the influence (which he had already insisted on) of the age and sex constitution of populations on their death-rates, and illustrates it by the remarkable table subjoined, showing the relative rates of mortality per 1,000 of all males and of farmers :—

—	15—	20—	25—	35—	45—	55—	65 and upwards
All Males - - -	4·14	5·55	7·67	13·01	21·37	39·01	103·56
Farmers - - -	1·30	2·40	4·29	7·03	11·20	23·97	87·81
Mortality of farmers to that of all males taken as 100 - )	31	43	56	54	52	61	85

Dr. Tatham's remarks upon this table may be taken as an illustration of his whole method of dealing with this subject, and we therefore offer no apology for giving them *in extenso* :—

"From the lower line of this table it may readily be gathered that at ages above 15 years the mortality of farmers averages between 50 per cent. and 60 per cent. of the mortality of all



males; but, if the mortality be calculated on the total years of life, and the total deaths, at ages 15 and upwards, the result will be widely different. Thus reckoned the mortality of all males would stand as 18·74 per 1,000, and that of farmers as 19·58. The paradox that farmers die more slowly at each separate group of ages than do all males, but that farmers in the aggregate die faster than all males do, is easily explained when the difference of age constitution as between farmers and all males is taken into account. The figures in Table I. show that there are nearly three-fourths as many farmers above 65 years of age, when the mortality is about 88 per 1,000, as there are at ages between 25 and 35 when it is only  $4\frac{1}{2}$  per 1,000; while among all males the number over 65 years when the mortality exceeds 103 per 1,000 is less than one-third of the number between 25 and 35 when it does not reach 8. It is clear, then, that crude death-rates, the use of which as between separate localities demands caution, are entirely untrustworthy as a means of comparing one occupation with another; accordingly, in this volume, the death-rates have been intentionally omitted from the columns headed 'Total 15 years and upwards.' The use of a crude rate in the entire age-period 25-65 years is open to a similar objection, since different occupations show extreme variations in age constitution even within these limits. From what has already been said in Part I. of this Supplement it is evident that this objection can be met by the calculation of 'death-rates in standard population.' This is practically the method which was employed by Dr. Ogle in dealing with the occupational mortality of the years 1880-82, although his results were expressed in a somewhat different fashion. His 'standard population' was the number of men aged 25-65 in the whole population among whom 1,000 deaths would occur in a year; the population in 1881 and the deaths in 1880-82 being taken as the basis. That number was found to be 64,641, including 41,920 between 25 and 45, and 22,721 between 45 and 65 years of age. The question then arose, how many deaths would occur in a year, according to the death-rates ascertained for a given occupation, among 41,920 men aged 25-45, and 22,721 men aged 45-65? The resulting number of deaths was called the 'comparative mortality figure' for that occupation; it represented with approximate accuracy the mortality prevailing in the occupation, as compared with the general male mortality. Following the same method for the purposes of the present Report, I find that on the average of the three years 1890, 1891, and 1892, 1,000 deaths occurred annually among 61,215 men between 25 and 65

years of age. At the census of 1891 occupations were abstracted in *decennial groups of ages*, whereas at the previous census they had been abstracted in *vicennial age-groups* only. In this respect I have an advantage which was not possessed in 1881 by my predecessor, and consequently I am able to bring each occupation more exactly into relation with the 'standard population' than had previously been possible. Of 61,215 men aged 25-65 at the census of 1891, there were—

22,586 in the age-group 25-35 years.			
17,418	„	„	35-45 „
12,885	„	„	45-55 „
8,326	„	„	55-65 „

“By applying to these four numbers the corresponding rates of mortality for any occupation shown in Table I., the number of deaths is ascertained which would occur among 61,215 men engaged in that occupation, but with the same age constitution as that which ruled in the general population. This number is the 'comparative mortality figure' for the occupation on the basis of the statistics for 1890-92, and if the calculated deaths in each of the four age-groups be proportionally divided out according to the causes of death in that age-group, the final result will show the parts of the comparative mortality figure which are due to the several causes. This has been done for each of the 100 selected occupational headings, and also for the grouped and subsidiary headings, and thus Table IV. has been constructed. By means of that Table the mortality of men in a large number of occupations and groups of occupations can be studied, and their varying liability to several of the principal causes of death can be traced.”

Dr. Tatham then points out that “recent statistics of occupational mortality” may be studied in their relation to similar statistics for former periods, and in his Report he frequently makes such comparisons, indeed he does so whenever opportunity offers. He explains in his usual lucid manner the difficulties he has to encounter and the corrections he has had to make in order to overcome these difficulties, which are mainly due to a less minute division of the age periods in former than in the present Report. We regret that we cannot enter into these particulars, and must refer our readers to the original work. When our author reaches the subject of “Occupied and unoccupied males,” to which he devotes a long and interesting section, in which he points out the many fallacies to which statistics

on this subject are liable to lead the uninitiated, he analyses the statistics of the 208,857 unoccupied males dealt with in the last Census Report, as follows :—

“Retired from business	-	-	-	35	per cent.
Pensioners	-	-	-	6	”
Living on private means	-	-	-	23	”
Lunatics	-	-	-	15	”
Others (including an unknown proportion of paupers and prisoners)	-	-	-	21	”

“As regards four of these five sub-classes this plan of classification seems at first sight to indicate with sufficient accuracy the reason for persons being returned as unoccupied; but on reflection it will readily appear that among persons under 65 years of age described as ‘retired from business’ there must be included many who have been compelled to retire on account of infirmity, and also an uncertain but possibly large proportion of unfortunate as well as of dishonest and dissolute persons who would be more accurately described as having failed in business than as having retired from business. Again, the last of the sub-classes, constituting 21 per cent. of the entire class, must be regarded as extremely indefinite.”

Dr. Tatham “on reflection” deals with the almost innumerable difficulties raised by the above statements, and ably masters most of them. Following this interesting discussion, he proceeds to analyse the occupational mortality statistics of males by his selected districts, ages, and diseases. The following statements are of special interest :—

“The following table shows at a glance the departures from the average: the rate for all occupied males at each age-group is taken as 100, and the rates for occupied males in the three localized groups are shown proportionally :—

—	15-	20-	25-	35-	45-	55-	65 and upwards
All Occupied Males -	100	100	100	100	100	100	100
Occupied Males, London -	108	100	112	125	123	120	108
Occupied Males, Industrial Districts -	120	109	119	128	135	137	118
Occupied Males, Agricultural Districts -	82	92	82	72	67	71	92

"The following Table shows the mortality from certain specified causes in each of these three sections of occupied males, as compared with that among all occupied males, the mortality of the latter being taken as 100 in each case:—

—	All Occupied Males	Occupied Males, London	Occupied Males, Industrial Districts	Occupied Males, Agricultural Districts
All Causes - -	100	120	131	72
Influenza - -	100	100	100	100
Alcoholism - -	100	138	146	54
Rheumatic Fever - -	100	100	114	86
Gout - -	100	300	100	100
Cancer - -	100	134	109	91
Phthisis - -	100	150	121	73
Diabetes - -	100	114	100	100
Diseases of—				
Nervous System - -	100	107	132	77
Circulatory „ - -	100	107	122	75
Respiratory „ - -	100	124	166	51
the Liver - -	100	111	119	89
Other Diseases of } Digestive System	100	100	129	82
Diseases of Urinary } System - -	100	137	122	78
Accident - -	100	86	105	79
Suicide - -	100	129	114	86
Other Causes - -	100	91	130	76

Dr. Tatham next proceeds to analyse the mortality in each of the selected occupations. We need scarcely say it would be impossible in a notice such as this to follow the author in his elaborate discussion of the causes of death in what may be said to be each condition of work and of rural life. We shall not even venture to give selections or attempt an analysis of the general results. The extraordinary amount of labour and research bestowed upon this branch of the subject can be estimated only by those who make a careful study of Dr. Tatham's work.

In conclusion, we have to congratulate the Registrar-General for England in being possessed of such an able officer as Dr. Tatham, who on his first trial proves himself such a

worthy successor of Dr. Farr and Dr. Ogle, and, with no small degree of pride, we claim him as an *alumnus* of the University of Dublin.

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*Twentieth Century Practice*. An International Encyclopedia of Modern Medical Science by leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. Volume XII. Mental Diseases, Childhood and Old Age. London: Sampson Low, Marston & Co. 1897. 8vo. Pp. 849.

THE subjects dealt with in the twelfth volume of this great work are—insanity, idiocy, criminal anthropology, old age, and diseases of children other than infectious disorders. The contributors are only five in number—Dr. J. Boy-Teissier, physician to the Hôpital Sainte-Margarite (Hospice des Vieillards), Marseilles; Dr. G. Fielding Blandford, Lecturer on Psychological Medicine at St. George's Hospital, London; Dr. Jules Comby, Physician-in-Chief to the Hôpital Trousseau, Paris, and Editor of *La Medecine Infantile*; Dr. Césaire Lombroso, Professor of Legal Medicine and Psychiatry in the University of Turin; and Dr. Paul A. Sollier, Professor of Hygiene in the Training Schools for Nurses of Paris, and Chief of the Clinique Adjunct for Mental Diseases in the University of Paris.

Dr. Blandford contributes the very admirable article on Insanity with which the volume opens. It runs to 254 pages, and is an excellent, common-sense exposition of the pathetic subject of which it treats. "Insanity," writes Dr. Blandford, "is a general term which, for the sake of convenience, by popular use is applied to every variety of unsoundness of mind. We use it much as we use the word 'fever.'" Inmates of a large lunatic asylum "resemble one another only in this, that they are all of unsound mind and out of harmony with their environment, and are taken care of in such an institution because they are incapable of taking care of themselves or managing their affairs."

The introductory sections are devoted to cerebral anatomy—which is briefly considered in the light of recent researches by Ramon y Cajal, Golgi, Andriezen, and His—pathology,

and ætiology. The causes of insanity group themselves, as usual, under the headings—predisposing and exciting. Those included in the former class are heredity, the insane diathesis or temperament, sex, age, civilisation, and “previous attacks.” We notice that the word “tendencies” is used by the author as an explanatory synonym for predisposing causes. A whole host of exciting causes is given and described.

At page 72 will be found an interesting account of the curious lesion called the “insane ear,” or hæmatoma oris or othæmatoma, as it is called. Dr. Blandford refers to a paper on the pathology of the affection which Dr. W. Ford Robertson has published in the fourth volume of the Edinburgh Hospital Reports.

The symptoms of insanity are very fully discussed, and then follows an account of the clinical varieties of the condition—namely, melancholia, stupor with dementia, acute dementia, acute delirious mania, mania, recurrent insanity, monomania, general paralysis of the insane, insanity without delusion, moral insanity and impulsive insanity. After a brief allusion to the terminations of insanity, Dr. Blandford discusses the question of treatment at considerable length. His remarks on the prevention of insanity are practical and of great importance, especially in reference to the delicate topics of self-abuse, drinking, and feeding, or rather fasting. “Another class,” says the author, “thinks it carnal or sensual to indulge the appetite and eat one’s fill, and endless evil comes to many who fast during Lent and other such seasons, and mortify the flesh according to the doctrines of an ultra-ritualistic party.” “The Insane and the Law” is the closing topic of which Dr. Blandford treats, especially in regard to—(1) the sequestration of the person or property of an alleged lunatic; (2) the responsibility of a criminal alleged to be lunatic; and (3) the testamentary capacity of an alleged lunatic.

The second article in the volume before us is on “Idiocy,” by M. Paul Sollier, of Paris. The author’s definition of the morbid state he describes may be quoted. “Idiocy is a chronic cerebral affection, congenital or acquired during infancy, with lesions of varied sort, but always of wide extent, and often generalised, characterized by troubles of the intel-

lectual, sensory, and motor functions, extending possibly even to the entire abolition of these functions, and by vices of organic conformation and arrests of development, and which owes its special character, as regards particularly the intellectual troubles, only to the young age of the subjects which it attacks."

The story of the symptoms of idiocy as told by M. Sollier is sorrowful reading. As he describes them, he draws a distinction between idiocy and imbecility, establishing the differential diagnosis between the two conditions step by step.

A third article on a cognate subject is that on "Criminal Anthropology," by Césaire Lombroso, of Turin. This is a still more harrowing topic than those which went before. All statistics agree in demonstrating the rarity of crime among women as compared with men. Although this may be true for grave crimes, it seems to the author that the statistics are misleading in one way, for prostitutes should be counted in with criminals. Lombroso makes the astounding statement, on the authority of Ryan and Talbot, that in London there is one prostitute for every seven women. In considering the "therapeutics of crime," Signor Lombroso expresses the opinion that, instead of attempting to cure crime when the delinquent has already reached adult life, we should aim at preventing it, by lessening (their complete annihilation being an impossibility) the causative influences previously enumerated.

"Old Age" forms the subject of a monograph by Dr. J. Boy-Teissier, of Marseilles. It is not a little remarkable that a "Boy" should write on "Old Age"! And very well he writes, giving us much food for reflection. Senility, according to our author, is a normal phase of existence, explained by biology. He then considers the anatomy of the old man and the physiology of senility. He discusses its causes and the means at our disposal for combating it. Among the latter he is far from including the administration of alcohol. "It has been said," he writes, "that wine is the milk of the aged, but I cannot subscribe to this aphorism, which is responsible for many cerebral hæmorrhages, attacks of angina pectoris, and of retention of urine." "It is sufficient



to have present in our mind the physiological action of alcohol, in order to be readily convinced of the pernicious rôle which it plays in the economy at all ages, and how much more it is actually dangerous in old age." "I regard normal senility as a period of reduced physiological activity, but all the parts of which are preserved in their harmonious relative proportions; and as metabolism should be proportional to the vital necessities, we cannot, without risking a disturbance of this equilibrium, introduce into the economy a food the principal property of which is precisely to provoke a functional hyperactivity in an organic medium adapted to a diminished functioning. Clinical observation and experience demonstrate every day with brutal force the correctness of these theoretical conclusions."

While thus insisting upon the dangers of a too generous or too stimulating diet, Dr. Boy-Teissier urges the physician to maintain at its highest degree of activity the respiratory function of his aged patients. "Oxygen is necessary at all periods of life, but especially in normal senility, in which the organic changes occurring in the lungs have, as a natural result, a very serious diminution in the power of respiratory exchange."

The author's observations on "Temperature" are excellent, but it will be difficult to persuade the old man that, instead of wrapping himself up in heavy garments and curling himself up in the chimney corner, "he ought to wear light though warm clothing," and "employ frequently general rubbing of the body and even sponging in water of a suitable temperature."

Of natural death Dr. Boy-Teissier speaks in complimentary terms. Death is necessary, useful, and finally good. But how rare is this natural death!—"that which occurs not through accident, but gradually, as the natural and final evolution of the being." The author then discusses the various modes of death from disease, the ordinary diseases in the senile, with their general and special pathological manifestations. He brings his paper to a close with a brief allusion to accidental and operative "traumatisms."

The last monograph in this volume is on Diseases of Children, excluding infectious diseases and rachitis. The



article runs to some 190 pages, and is written by Dr. Jules Comby, of Paris. The classification adopted is into general nutritive disorders or dyscrasiæ, and local or regional diseases—that is to say, the diseases which are localised in one organ or system of organs.

The first group may be further subdivided into—scrofula, arthritism, blood disorders, and diseases of evolution, rachitis being left out, as it had been already considered in Volume VII. “Arthritism is a term which includes obesity, asthma, migraine, diabetes, &c., which are for the most part hereditary affections.” The work is in general well done, but in parts it is sketchy and correspondingly disappointing.

Taken as a whole, the volume fully sustains the reputation of “*Twentieth Century Practice*.”

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*Introduction to the Study of Organic Chemistry.* By JOHN WADE, B.Sc. (Lond.). London: Swan Sonnenschein & Co. 1898. Pp. 460.

THIS book is intended as a guide to students commencing organic chemistry, and more especially for students in the universities and technical schools. It is carefully and accurately written, and quite up to date in its information.

The subject is treated experimentally from the outset, the hypotheses and theories which form so essential a scaffolding being introduced as the facts require them. Organic chemistry is not an easy subject of which to gain a firm grip, and we think that many would agree with us in feeling that Mr. Wade might, with advantage, have made the references to theory more ample, and possibly more attractive.

For example, in discussing the constitution of the four lactic acids, a brief account of stereo-isomerism is introduced, but scarcely sufficient to explain its importance to a novice in the matter. Neither does the exposition of Kekulé's ring theory of benzene appear to us to be as lucid as its fundamental significance demands.

The contents of each chapter are summarised in charts, which the author's experience as a teacher convinces him

will be found of material assistance to other lecturers and to students.

A brief scheme for the qualitative analysis of organic mixtures is given in an appendix, and in another appendix are the laboratory notes, which deal with the practical details of quantity and manipulation.

Mr. Wade has accomplished his task in a scientific, if somewhat dry, manner, and it may be said, without fear of contradiction, that anyone who has mastered the contents of his book and performed the experiments will have attained an accurate and comprehensive knowledge of organic chemistry.

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*Cutaneous Medicine : A Systematic Treatise on the Diseases of the Skin.* By LOUIS A. DÜHRING, M.D. Parts I. (1895) and II. (1898). Philadelphia: J. B. Lippincott Co.

NEARLY 20 years ago Dr. Dühring published a text-book upon diseases of the skin which went through three editions. It was an admirable account of the subject, and held the foremost place among American treatises on dermatology.

This treatise was translated into French, Italian, and Russian, but for several years past has been out of print.

Dr. Dühring now puts forward a more comprehensive work, of which two parts have appeared, separated by an interval of three years.

The author's main object is to produce a practical work, resting upon clinical observation and supported by pathology and morbid anatomy. Therapeutic questions are discussed upon conservative lines in the light of modern research and experience.

The order in which the topics are taken up differs slightly from that adopted in the author's previous treatise. Part I. of the present work treats of general questions—viz., the anatomy and physiology of the skin, and this is followed by a sketch of the general symptomatology, ætiology, pathology, diagnosis, prognosis, and treatment of cutaneous affections. Part II. opens with an exposition of the

author's classification, which is essentially based upon the well-known scheme published by F. Hebra in 1845. This is a striking tribute to the soundness of the tenets of that great clinical observer.

The ground being thus cleared, the special affections of the skin are entered upon, and the first three groups are—(a) anæmias, (b) hyperæmias, (c) inflammations.

There are numerous good illustrations, both histological and clinical. The latter are full-page, and, although uncoloured, afford in many cases really excellent delineations of morbid appearances of the skin—*e.g.*, the erythemata and urticaria pigmentosa. Some of the illustrations are reproduced from the author's atlas. The clinical descriptions are usually clear, and are evidently the outcome of extensive experience; this is especially true of the articles on impetigo, dermatitis herpetiformis, and pemphigus. But we cannot so warmly congratulate the author upon his discussion of eczema, to which more than 100 pages are allotted. This important article is deficient in width of view, and the writer has not fully grasped the modern notions of secondary infection by pyogenic organisms, grafted upon a primary eczematous basis. Eczema seborrhoicum is inadequately described, and the whole section is scarcely up to the high level of the rest of the work.

With this exception we have nothing but commendation for Dr. Dühring's text-book.

*Masters of Medicine : William Harvey.* By D'ARCY POWER, F.S.A., F.R.C.S. Eng.; Surgeon to the Victoria Hospital for Children, Chelsea. London: T. Fisher Unwin, Paternoster-square. MDCCCXCVII. 8vo. Pp. 283.

THE writing of this sympathetic and entertaining memoir of the discoverer of the circulation of the blood must have been a labour of love to Mr. D'Arcy Power.

The volume is one of the series of bibliographies of *Masters of Medicine* which Mr. T. Fisher Unwin, of Paternoster-square, London, is at present publishing, and which is to include a memoir of our illustrious fellow-

countryman, William Stokes, by his son, Sir William Stokes.

The setting of the volume is artistic and attractive. The late Mr. Ernest Hart, D.C.L., was appointed editor of "Masters of Medicine," and his lamented death has been a sad loss, more especially as he had undertaken to write the memoir of Edward Jenner.

The book includes nine chapters, an appendix giving authorities for the statements in each chapter, and a full alphabetical index of proper names and subjects. The topics discussed in the several chapters are Harvey's lineage and his early life; an account of the Lumleian lectures on surgery, "established at a cost of forty pounds a year, laid as a rent-charge upon the lands of Lord Lumley in Essex, and of Dr. Caldwell in Derbyshire;" the zenith, the civil war; Harvey's later years, his death, burial, and eulogy; his anatomical works, and the treatise on development. From this analysis it will be seen that Mr. D'Arcy Power has given a comprehensive review of Harvey's life and work. The author's account of the reasoning and experiment which led Harvey to make his great discovery is clear and easily followed. It is well worth reading, and the whole book will pleasantly and profitably while away a leisure hour, telling as it does in simple language the story of the life and times of one who may well be called a "Master of Medicine."

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*John Hunter: Man of Science and Surgeon (1728-1793).* By STEPHEN PAGET. With Introduction by SIR JAMES PAGET. London: T. Fisher Unwin. 1897.

It is gratifying to every true lover of our profession to find an appreciative series of biographies of the heroes of medicine advancing to the view of the lay literary public on lines parallel to those occupied by the biographies of the "Builders of Greater Britain," and the histories of the valuable series edited under the generic name of "The Story of the Nations." Surely no more appropriate leader's name could be found in the long roll of the great intellects, to whose life-work our present knowledge of the theory and practice

of our profession is due, than that which illuminates the title page which now lies before us. His absolute devotion to the noble calling to which he devoted the mental and physical energies of his life can hardly, we think, be better evidenced than in the paragraph of concentrated information which we extract from page 116:—

“When Home went off to his eligible situation at Plymouth, John Hunter was fifty years old; Surgeon-Extraordinary to the King, Surgeon to St. George’s Hospital, and a Fellow of the Royal Society; having a large practice, and a name known everywhere. Yet he never saved money; he was for ever adding to his museum, till he had spent no less than £70,000 on it, and he died scarce able to pay his debts. To have an idea of his absolute devotion of himself to scientific work, we must realise that he lavished on science the income that he had made at the risk of his life, by the hard work of practice, and even in ill-health and under the shadow of death never rested from his incessant task of collection, dissection, observation, and experiment. The letters to Jenner show the marvellous restlessness of these years, from 1779 to 1788, full of science and of practice, added or rather multiplied together. Honours came to him from abroad, from Gothenburg and Paris. The house in Jermyn-street could now no longer hold his collection, and he must move elsewhere, even at the cost of a bad bargain. Over everything hung the clouds of want of money, ill-health, and estrangement from his brother.”

John Hunter died of angina pectoris, one of the special physical plagues of the “intellectual and anxious.” The restless craving for additions to his collection has been illustrated by many an anecdote. Here is a characteristic one:—“The late Dr. Clarke had a preparation on which he set a high value, and Hunter had often viewed it with longing eyes. ‘Come, doctor,’ said he, ‘I positively must have that preparation.’ ‘No, John Hunter,’ was the reply, ‘you positively shall not.’ ‘You will not give it to me, then?’ ‘No.’ ‘Will you sell it?’ ‘No.’ ‘Well, then, take care I don’t meet you with it in some dark lane at night; for, if I do, I’ll murder you to get it.’” And another:—“He was not unfrequently obliged to borrow of his friends, when his own funds were at a low ebb, and the temptation was strong. ‘Pray, George,’ said he, one day, to Mr. Nicol, the book-

seller, 'have you got any money in your pocket?' Mr. N. replied in the affirmative. 'Have you got five guineas? Because, if you have, and will lend it to me, you shall go halves.' 'Halves in what?' inquired his friend. 'Why, halves in a magnificent tiger, which is now dying in Castle-street.' Mr. Nicol lent the money, and Hunter got the tiger."

The almost startling features of his continued enthusiasm and energy are well illustrated by the incident of his appointment with Mr. Thomas, who had recently arrived in London. This young gentleman was told to come in the morning as soon after *four* as he could. "It was summer; Mr. Thomas kept the appointment, and found Hunter, at that early hour, busily engaged in dissecting beetles."

But we must not abuse the reviewer's trust too far by placing any other items of this most remarkable career before our readers. We recommend every one of them to procure this interesting volume for themselves—to read, mark, learn, and inwardly digest its contents; to use it for example and for inspiration; and to transmit it as an heirloom. It is hardly necessary for us to add our congratulations to the author, and, indeed, printer and publisher as well, on the way in which this volume has been composed and placed before the public eye.

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*Text-book of Physiology.* Edited by E. A. SCHÄFER, LL.D., F.R.S. Volume I. Edinburgh and London: Young J. Pentland. 1898. Royal 8vo. Pp. 1036.

ONE of the most pressing practical questions of the present day is the unmanageable dimensions to which scientific literature has grown; and in no branch of science is this difficulty more felt than in physiology. It is quite impossible to give in an ordinary text-book any complete account of the innumerable researches which have been published, to discuss with desirable fulness the conflicting views which are held on almost every question, or to even name the authors who have taken part in the different controversies out of which truth is ultimately arrived at. The labour of consulting the original papers is enormous,

and it is one which is impossible except for those who live in large centres and have access to public libraries.

These considerations will ensure a welcome for the great work of which this volume is the first instalment—a work which “is not intended altogether to supersede the consultation of original papers, but which will, it is hoped, reduce the need of it to more reasonable limits, and will, moreover, by the references to literature, which throughout form an important feature of each article, facilitate such study where it is still necessary.” Such an end was attained by the publication of Hermann’s “*Handbuch der Physiologie*,” the last part of which appeared in 1883. Many of the articles in that work are classical, but much that is in it is now out of date; and as in the interval that has elapsed since its publication, physiology has, perhaps, made relatively greater strides in this country than anywhere else, it is peculiarly fit that the present complete summary of our knowledge should be carried out in England and by British authors.

Professor Schäfer is to be congratulated on the distinguished staff of collaborators he has secured; not only are they all men well versed in science, but each of them has by his own researches enriched that branch of physiology on which he writes, so that in each article we find not only a summary of the work of others, but a critical estimate of this work, together with numerous original observations of great value.

The subjects of generation and of reproduction, as well as the general physiology of the cell, are excluded from the work as being largely morphological, and being treated of in separate and readily accessible text-books.

In the present volume the articles “deal mainly with the chemical constitution and the chemical processes of the animal body, and with those physical and chemical phenomena which are connected with the production and elaboration of the secretions and other fluids of the body. The articles in the second volume will include the mechanics of the circulation and respiration, and of special muscular movements; the general physiology of muscle and nerve; the special senses; and the functions of the central nervous system.”



In the volume before us eighteen articles are contained. Two of these are by Professor Halliburton—the Chemical Constituents of the Body and Food; and the Chemistry of the Tissues and Organs. The author, who must be looked on as the foremost British physiological chemist, has enriched the subject of both of these chapters, more particularly the second, with many original and very valuable discoveries. His researches on the proteid constituents of muscle and of many of the glandular organs, his observations on the nucleo-proteids will occur to the mind of every physiologist. His articles are such as might be expected from such a writer—full, accurate, lucid, and abounding with original matter.

The editor, Professor Schäfer, contributes four articles—the Blood; the Mechanism of the Secretion of Milk; Metabolism; and the Influence of the Ductless Glands upon Metabolism and the Internal Secretions. With the subject of the last chapter Professor Schäfer's name is peculiarly associated, but the other chapters are no less written with the hand of a master. Particularly would we refer to the section on metabolism, where this difficult and distracting subject is treated with a fairness and completeness rarely attained. No important facts are omitted, the balance is evenly held between the conflicting theories of the rival schools—chiefly those of Bonn and Munich—and, considering that the article is under 70 pages in length, it must be looked on as a remarkable performance.

An unusual feature of this work is that hæmoglobin is treated of in a section by itself. The numerous remarkable properties of this extraordinary substance, and its peculiar physiological position, existing in the blood, but really belonging to respiration, justify this treatment. The article by Professor Gamgee is one of the most striking in the volume. The author has occupied himself recently with the photographic spectrum of hæmoglobin—that is, the absorption which this substance produces in the ultraviolet portion of the spectrum. This he finds is even more characteristic of hæmoglobin than is the better known absorption in the visible spectrum. Furthermore



in this article a full description is given of the spectrophotometer—an instrument which has already given most important results, and which is destined to still further application in the study of blood and other coloured fluids. The views of Hoppe-Seyler that the colouring matter as it exists in the corpuscles is different from that which can be separated from them, as well as the statement of Bohr that there are several oxy-hæmoglobins, meet with no favour from Professor Gamgee.

Professor Weymouth Reid writes two chapters—A General Account of the Processes of Diffusion, Osmosis and Filtration; and On the Secretion and Absorption by the Skin. We should have wished to see the former subject, particularly the section on osmosis, a little more expanded, and treated more from the physiological standpoint.

Dr. Starling's articles are two in number—On the Production and Absorption of Lymph; and On the Mechanism of the Secretion of Urine. There is no one in this country who has taken so important a part as Dr. Starling has done in the great controversy as to the mechanism of the formation of lymph, which has arisen since the publication of Heidenhain's remarkable work in 1891. His views are well known, and in his article are clearly stated, all fairness being at the same time shown to those who differ from him. As regards the equally vexed question of the secretion of urine, he declines to decide between the Bowman-Heidenhain and the Ludwig schools; but he maintains that "whether we look upon the cells of the convoluted tubules as secretory or absorptive in function, we have at present no evidence that the cellular covering of the glomeruli acts otherwise than passively in the production of the glomerular part of the secretion."

A most exhaustive article on the Chemistry of the Digestive Processes is contributed by Professor B. Moore.

Mr. Langley contributes the article on the Salivary Glands—a subject of which a great part of our knowledge is due to the work of the author.

The chapter on the Mechanism of the Secretion of Gastric, Pancreatic, and Intestinal Juices is by Mr.

Eakins, while that on the Mechanism of Bile Secretion is by Dr. Noel Paton.

An exceedingly good article on the Chemistry of the Urine is contributed by Mr. F. Gowland Hopkins.

Finally, two long articles by Dr. Pembry on the Chemistry of Respiration, and on Animal Heat, are remarkable by the care with which all the facts are collected and arranged, as well as by the statements of the original work done by the author on both of these subjects.

In all the articles the fulness with which the literature is worked up is most noteworthy. The references are given in full, and there is no doubt that the hopes expressed by the editor in his preface will be realised.

The letterpress is illustrated by 92 figures in the text, and three coloured plates of spectra. There are two remarkably good indexes—one of authors, the other of subjects. The way in which the work is brought out leaves little to desire, although, perhaps, a smaller page and a proportionately larger number of volumes might have made the pleasure of reading the work greater. But as it stands the work is one of the highest excellence, and cannot fail to be of the greatest value in serving to spread a really complete knowledge of the present condition of the science of physiology. It is a work of which every Englishman must feel proud, and one which will greatly enhance the already high position which the English school holds in this branch of science.

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*Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. II. B.—Bywater. Washington: Government Printing Office. 1897. Large 8vo. Pp. 954.*

IN his letter to General George M. Sternberg, Surgeon-General of the United States Army, presenting the second volume of the second series of the Index-Catalogue of the Library of the Surgeon-General's Office, Deputy-Surgeon-General and Lieutenant-Colonel D. L. Huntingdon summarises its contents as follows:—

“This volume contains 15,732 authorities, representing 6,383 volumes and 14,802 pamphlets. It also contains 5,774 subject-titles of separate books and pamphlets, and 21,725 titles of articles in periodicals.”

There is no change in the form of the present instalment of this colossal work. The volume carries us from “B.” to “Bywater,” so that it is entirely occupied with but one letter of the alphabet.

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*Religio Medici and other Essays.* By SIR THOMAS BROWNE. Edited with an Introduction by D. LLOYD ROBERTS, M.D., F.R.C.P. Revised Edition. London: Smith, Elder & Co. 1898. 8vo. Pp. xxxix + 305.

As the Editor explains in a brief “Foreword,” the text of this beautiful edition of Sir Thomas Browne’s best-known essays has been carefully revised. A short posthumous tract “On Dreams” has been added. This was originally published in 1835 by Simon Wilkin from the Sloane manuscripts in the British Museum.

The Editor’s bibliographical introduction is a fitting tribute to “the learned Sir Thomas Browne, Knt., M.D., late of Norwich,” as the worthy old-time physician was described on the title page of an early edition of his works published in 1712.

The contents of the volume before us embrace the celebrated “*Religio Medici*,” “*Christian Morals*,” “*Letter to a Friend*,” “*On Dreams*,” and “*Urn Burial*.” Of the last-named Carlyle says: “The conclusion of the essay on *Urn Burial* is absolutely beautiful—a still elegiac mood, so soft, so deep, so solemn and tender, like the song of some departed saint flitting faint under the everlasting canopy of night; an echo of deepest meaning ‘from the great and famous nations of the dead.’”

“Oblivion,” wrote Sir Thomas Browne, “is not to be hired.” “The greater part must be content to be as though they had not been, to be found in the register of God, not in the record of man.” “Oblivion shares with memory a great part even of our living beings.” “There is nothing strictly immortal but immortality.” “Life is a pure flame, and we

live by an invisible sun within us." "Happy are they whom privacy makes innocent, who deal so with men in this world that they are not afraid to meet them in the next, who, when they die, make no commotion among the dead, and are not touched with that poetical taunt of Isaiah."

Such are some of the passages which wrung so hearty a mead of praise from Thomas Carlyle. Perhaps a more appropriate quotation for our pages would be this passage from the *Religio Medici*—"I can cure the gout or stone in some, sooner than divinity pride, or avarice in others. I can cure vices by physic when they remain incurable by divinity, and they shall obey my pills, when they condemn their precepts. I boast nothing, but plainly say we all labour against our own cure; for death is the cure of all diseases. There is no *catholicon* or universal remedy. I know but this, which though nauseous to queasy stomachs, yet to prepared appetites is nectar, and a pleasant potion of immortality."

And so we bid farewell to the quaint philosopher of Norwich with the old-world words quoted by himself—"Vale, vale, vale, nos te ordine quo natura permittet sequamur."

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*Archives of the Roentgen Ray.* Edited by W. S. HEDLEY, M.D., and SYDNEY ROWLAND, M.A. Vol. II. No. 3. February, 1898. London: The Rebman Publishing Company.

THE present number of this publication, better known by its former title, "Archives of Skiagraphy," opens with an editorial article on the work of the Roentgen Society, which is now in full swing. A detailed account of the proceedings of the Society follows. Two meetings are reported—those of December 7th, 1897, and of January 11th, 1898. There are articles on Contact-breakers by Mr. Ernest Payne, M.A., on a Case of Coxa Vara, by Mr. Wm. Irvine Fortescue, M.B., of Aberdeen, and on "Intensifying" Screens, by Dr. Norris Wolfenden.

Five plates are included in this number of the Archives. Professor Carl Beck, of New York, illustrates a case of

bony ankylosis (wrongly spelled " anchylosis ") of the knee in a woman aged 34. Mr. C. Thurstan Holland, of Liverpool, localises a grain of shot in the left orbit by means of a skiagraph. Dr. Hedley describes a " localization " case, in which the leg was converted into a regular pincushion. Another plate shows arrested development of the ulna. But a case of vesical calculus reported by Dr. R. Lane Joynt, of the Meath Hospital, Dublin, bears away the palm for interest. The patient was a boy, aged four and a half years, who was brought to the Meath Hospital presenting symptoms suggestive of calculus. A skiagram was taken, which showed approximately the size of the calculus. It was removed by suprapubic cystotomy, and was found to weigh three drams. The boy left hospital quite well in ten days. The photographic plate was a " Cadett lightning."

" Notes and Abstracts " form an instructive item in the contents. Under the heading, " Still wanted—a Name," we read :—" For X-ray photography the word *Diagraphy* is suggested by Dr. Max Levy, and *Diascopy* for screen work. The word *Actinogram* is sometimes used. For the science of measurement by Roentgen rays Dr. Hoffmann suggests *Skiametry*. Some may prefer *Radiometry*. Whatever word be eventually chosen, it ought to contain a common root and be applicable, by varying its terminations, to screen work, to X-ray photography, to X-ray therapeutics, and to measurements by X-rays."

Surely the root or stem wanted is *ἀκτιν*—from *ἀκτίς*, a ray. Then screen work would be *actinoscopy*, X-ray photography *actinography*, X-ray therapeutics *actiniasis*, and X-ray measurement *actinometry*.

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*Spinal Caries*. By NOBLE SMITH, F.R.C.S., Ed.; L.R.C.P., Lond.; Surgeon to the City Orthopædic Hospital, &c. Second Edition. London: Smith, Elder & Co. 1897. Pp. 150.

WE may at once confess to a feeling of considerable disappointment after reading this work of Mr. Noble Smith. We feel that adverse criticism might fairly be made against

more than one section of the book, and the pervading fault is weakness. No one, we imagine, can doubt that the main object which the author had in writing the book was to bring before the profession his "adaptable metal splint," and the value of the book depends on the view which the reader may form of this apparatus. Personally we consider that this or some similar splint is to be preferred to plaster, but we think that no such method of treatment is so satisfactory as that of recumbency and extension where it can be thoroughly carried out.

As regards the title, we are not so satisfied with it as the author appears to be. He writes—"Spinal Caries is a scientific name, and clearly indicates the nature of the affection." If by "caries" we understand "tuberculosis" it does indicate the nature of the disease, but why not then use the latter unequivocal term? We say "unequivocal" advisedly for, we maintain, "caries" is not always used in the same sense. For instance, some writers speak of a syphilitic caries, and by others "caries" is used as a name for only surface tuberculosis of bone. Mr. Watson Cheyne uses the word in this sense, and no one can afford to ignore his authority in connection with this branch of pathology.

The treatment of the pathological aspects of the subject is the element of the book which we had, perhaps, particularly in mind when we described it as weak. In one place the writer declares that "caries is, undoubtedly, essentially a tuberculous disease," but in discussing ætiology he seems to throw doubt on this. He first speaks of general tuberculosis as a strong predisposing cause of caries—a statement which we do not pretend to understand; and then in reference to other cases where "the disease is concentrated in one part," he says—"there is more probability that the active cause has been an injury, whatever the constitutional condition may be." The part taken by injury in the production of a focus of tubercular disease, we think, has been fully and satisfactorily explained by various authors. The supposition that injury in a healthy individual is capable, at one time, of producing those simple inflammatory effects with which everyone is familiar, and at another, effects which we regard as essentially tubercular, seems to us highly improbable. It is,

indeed, equivalent to saying that the same cause, acting under precisely the same conditions, can produce totally different effects. One might almost as reasonably imagine that the same organism might, at one time, produce typhoid fever, at another, measles or scarlatina. Moreover, it is well-known that slight injuries are usually the antecedents of these diseases, graver injuries causing changes, which, however marked, are none the less simple. If injury alone is the cause in the first, we are driven to the absurdity, or what seems to us so, that the greater cause produces the less effect. For these and many other reasons we cannot agree with the author that injury is ever the "active cause," or that the occurrence of the disease is ever independent of an abnormal constitutional state.

The chapter on Operative Treatment is not in all respects satisfactory. The treatment of spinal abscess is now pretty clearly defined, and such being so it seems unnecessary to seriously discuss such an obsolete practice as aspiration. The practice of daily irrigations with carbolic or other lotions implies a greater faith in these necessarily weak antiseptics than most surgeons of to-day would sympathise with. The resort to such a method would usually be regarded as an acknowledgment of failure in the primary operative treatment.

With reference to the dangers prior to the introduction of antiseptics, the author writes:—"If the patient escaped septic contamination then it generally happened that prolonged suppuration occurred," &c. Surely this is a contradiction in terms. Stress is rightly laid on the antiseptic care with which such operations as these should be conducted; but how does the writer reconcile with this the use of "the bristle throat probang" to deal with the walls of "long sinuses?" Again, such a statement as the following, referring to operation on post-pharyngeal abscess, is not to be expected from one who attaches much importance to asepsis:—"Fluctuation may be detected by one finger placed in the wound and another in the throat."

Chapter VII. is devoted to a list of cases. Most of these are very briefly recorded, and some are not of any special interest. Almost all point to the efficacy of the "adaptable metal splint," and are so far important.



The book concludes with a reference to the treatment by forcible reduction. The criticism is neither hot nor cold.

Although we have found somewhat of interest and use in this little book, we do not feel disposed to conclude our review with the words—"no medical man's library can be complete without it."

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*Diseases of Women.* By ARTHUR LEWERS, M.D. Fifth Edition. London: H. K. Lewis. 8vo. Pp. 526.

THE fact that this work has passed rapidly through four editions is proof positive of its popularity, and that it does or is supposed to supply a want in medical literature is therefore apparent.

We understand that this book is much affected by medical students, whose ambitions are not infrequently limited by the "pass list" of their final examinations. To them the work seems to have much to recommend it—the letter-press is clear, the binding showy, illustrations sufficiently numerous to break the monotony of reading, and the book itself of a compact, manageable size, enabling it to be easily handled and at the same time to contain all necessary information of a practical nature.

That this, the fifth edition, is in every way superior to its predecessors does not admit of doubt, and yet we cannot but think that it falls lamentably short of what a work of its size might be made.

We have a right to demand of our specialists that a reasonable knowledge of scientific advance, so far as this affects the special branch of each, is forthcoming, and likewise that the capacity be present in them of accurately gauging the importance of contemporary work; similarly, the works produced by them should not be found wanting in either of these respects.

In the book before us the author has not been careful to avoid criticism under these heads, and the conservative nature of the work greatly mars its efficiency. Thus, we find the side position is still recommended for bimanual examination, and the statement made that diagnosis can be made equally well whether this or the back position be adopted.



Needless to say that this opinion will not be endorsed by one in twenty of the leading gynæcologists of the world, and that those holding such views are becoming year by year fewer.

Again, the passage of the uterine sound by touch is minutely described after the method popular twenty-five years ago, at a time when it was customary for the operator to pass the instrument beneath the bed-clothes, and the class of attending students had to take on trust the proceedings adopted for the patients' cure. The author having by this description thoroughly wasted the time of his readers, calmly adds—that should the operation be carried out as described, there is considerable danger of carrying septic matter from the vagina into the uterus and setting up an inflammation that may prove dangerous. The uterine sound, as our readers are aware, is an instrument of very limited value now-a-days. It is seldom passed until the position of the uterus has been ascertained by means of the bimanual examination, and without the aid of a vulsellum fixed to the anterior lip of the cervix, and a posterior vaginal speculum. Nor are we in agreement with the advice that the sound be disinfected by being dipped in 1 in 1,000 corrosive sublimate solution. This antiseptic is easily decomposed by most of the commoner metals, and is calculated to inflict much greater injury on the sound than on the germs which it carries.

Directions as to the method of passing a catheter are omitted, and the use of celluloid instruments is recommended to the exclusion of others. Now, it does not fall to the lot of every young practitioner to have had opportunities of passing a catheter; hence the importance of a detailed description. Again, why is all mention of glass omitted as a substance suitable for catheters? These will not break in use; can be placed in water at any temperature without fear of injury, and are obtained at a price so low that any other material must appear dear by comparison.

On page 44 two inaccurate items of information are vouchsafed—(1.) That Hegar's dilators will not stand boiling; and (2.) that catgut may be sterilised by dry heat at a temperature of 150° F.

Hegar's dilators become straightened out by being boiled,

and this, which in nowise impairs their efficiency, is the only change they undergo. As regards catgut, such a temperature as that named is totally inefficient, and a dry heat of something over 350° F. is required for its sterilisation. This temperature will, moreover, completely destroy the catgut unless certain precautions are observed. It is, therefore, a preferable plan to allow the gut to boil in super-heated alcohol.

Fig. 22 represents a dysmenorrhœal membrane and has figured as such in earlier editions, yet the author quotes Mathews Duncan as stating that the picture represents an early abortion, a view to which most gynæcologists will subscribe.

The author says that "rupture of the perinæum only facilitates prolapse; it is not an exciting cause." In this we cannot concur. Rupture of the perinæum is an exciting cause of rectocele, cystocele, and retroflexion, forerunners and close associates of procidentia uteri. Amputation of the cervix is still lauded as the operation applicable for many cases of cancer of that structure. Needless to say that extirpation of the uterus is a more far-reaching and preferable operation.

When writing of pelvic peritonitis the author states that it may arise from exposure to cold, this giving rise to corporeal endometritis, and by extension of the latter inflammation to peritonitis. Again, we read that regurgitation of menstrual blood can account for this inflammation when the flow is of small amount, or should the "quantity of blood in such cases be considerable, we have what is known as 'pelvic hæmatocele.'"

It is hard to say which of all these statements is the most inaccurate. Endometritis, if not due to germ invasion, never gives rise to peritonitis by extension. Hæmorrhage into the peritoneum, if of small amount, is quickly absorbed, and gives no indication of its presence; and, lastly, it is a circumstance of grave doubt whether a pelvic hæmatocele can exist, apart from operation, save as a result of tubal pregnancy.

It is needless to go further into the criticism of this work. It contains, on the whole, as is to be expected, sound information; but we hold that it is unpardonable to let appear in a fifth edition inaccuracies which might easily be passed over were this book coming out for the first time.

## PART III.

### MEDICAL MISCELLANY.

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#### *Reports, Transactions, and Scientific Intelligence.*

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*On the New Tuberculin Preparation.* By GEHEIMRATH PROF. DR. ROBERT KOCH. Translated from the *Deut. med. Woch.*, No. 14, 1897, by H. E. LITTLEDALE, M.B., House Surgeon, Sir P. Dun's Hospital.\*

SINCE my publications on tuberculin I have carried on investigations on the employment of cultures of tubercle bacilli for the treatment of tuberculosis uninterruptedly, and believe that I have come to a sufficient conclusion with them to be able to publish the results of these investigations.

The complete product of the work carried on throughout these years will appear simple, and in many respects positively obvious; but anyone who has worked on tuberculosis knows how extraordinarily tiresome and tedious such investigations are, and how they often put one's patience and endurance to the hardest test. I wish to make this observation here chiefly in thanks to Dr. M. Beck, who has assisted me at my work in an untiring and trusty manner.

The employment of bacteria and their products for curative and prophylactic purposes always depends on a kind of immunisation. I think it is therefore necessary for me to give a brief and accurate definition of my position in this matter to meet questions likely to arise, and to avoid misunderstanding at a future period.

Originally immunity against infectious diseases was considered something simple and indivisible, but by degrees people have come round to the view more and more that immunity may certainly be a simple matter, but is not necessarily so, as it may consist of two components, perhaps even several in combination. This can best be explained by some examples. As Behring and Kitasato have shown, animals can be immunised against tetanus; and for this purpose culture products—that is, the products of tetanus bacilli,

\* Read before the Dublin University Biological Association in December, 1897.

which are soluble in water—are employed, amongst which the tetanus poison is found. Against this poison, and in fact against very large doses of it, animals have been protected—certainly only for a limited period. The immunisation has no influence on the tetanus bacteria themselves, they grow in the body that has been immunised further and without check so long as the opportunity is given them to do so, as they require a medium quite free from oxygen owing to their method of growth.

We have here to deal with a pure and simple case of poison immunity; and when this artificial immunity has disappeared at the end of some weeks, it may happen that the tetanus poison, which the tetanus bacilli always keep on making, ceases to be destroyed in the body of the immunised animal, and it forthwith dies of tetanus without requiring a fresh infection with the bacilli. We find the reverse conditions in the case of cholera and typhoid fever. In these diseases the investigations of Pfeiffer have proved that animals immunised with fresh agar cultures are actually protected against the living bacteria, but not against the poison they produce. The living cholera and typhoid bacteria die in a surprisingly short time in the bodies of animals so immunised; but we have not yet succeeded in immunising animals against the actual poison beyond a definite dose. Here then the immunity is purely a bacterial one—that is, it is directed exclusively against the bacteria themselves.

The ideal immunisation will ever be one which protects the bodies of animals, in the case in point mankind, against all the injurious effects which pathogenic micro-organisms bring with them, and not against only one of them.

These conditions play a large part also in the case of tuberculosis. It would certainly at first appear, in the case of tuberculosis, as if no immunity ever arose, as it may last for years in man without the susceptibility to it ever decreasing. Even in the cases where a cure takes place, the individual has not become immune against a fresh invasion of tubercle bacilli, but is, on the contrary, as experience teaches, rather more susceptible to a fresh tubercular invasion. There are, I admit, indications which advocate the fact that under certain definite circumstances a sort of immunisation can be recognised in tuberculosis. I find these indications in the observations one can make in miliary tuberculosis as seen in man, and in experimentally produced tuberculosis in guinea-pigs. In such cases there usually occurs a stage in which the tubercle bacilli disappear, though at the beginning they were present in large quantities, so that one has to search very carefully

to find any trace of them at all. This is very striking, for we shall see later on that when tubercle bacilli are experimentally introduced into animals they take an extraordinarily long time to become absorbed: so in the cases mentioned there appears to be actually an immunisation process, and, what is more, a bacterial one. Unfortunately it comes too late to be of any use to the organism concerned.

It was these observations that induced me from the very beginning to search without intermission for a method that would permit of this condition of immunity being carried out in tuberculosis, and in an early stage when it might be of some use.

The two processes that I have spoken of have one thing in common—namely, that the body is flooded with tubercle bacilli in a short time. This very fact also appears to me to offer an explanation why a pronounced state of immunity does not occur in tuberculosis under ordinary conditions.

Tubercle bacilli usually behave in such a way that they only grow in small numbers and very slowly in the tissues of the human body; they are generally surrounded by necrotic tissue, and it is only after a long time, when they have actually died and probably undergone complex chemical changes, that they come to be absorbed. Where tubercle bacilli grow luxuriantly and in large masses, as, for instance, in cavities and on the surface of mucous membranes, they are cast off unchanged and not absorbed at all; so that under such conditions no immunisation can take place. Immunisation can occur then only when numerous tubercle bacilli spread themselves rapidly throughout the entire body, and come into reciprocal action with the living tissues, as in miliary and guinea-pig tuberculosis.

To get an artificial immunity relative conditions must be sought after which are as nearly like those described as possible; but downright insuperable difficulties are opposed to this. All attempts to bring about the absorption of living and unaltered or even dead tubercle bacilli in somewhat large quantities, from the subcutaneous tissue, from the peritoneal cavity, or from the circulatory system, have failed in my hands, and just the same has been the result with many other investigators.

Dead tubercle bacilli when subcutaneously injected produce abscesses without fail, and they can be proved to be present in the resulting abscesses in large quantities for months after, and stain readily. When introduced into the peritoneal cavity of animals they are better absorbed, and I have succeeded in this manner in obtaining distinct immunity; but at the same time circumscribed inflammations occur with such sequelæ as adhesions between the

abdominal organs, kinking and occlusion of the gut, &c., to which a large percentage of the animals are sacrificed.

Dead tubercle bacilli injected into the circulation of animals, for instance rabbits, produce in the lungs exactly similar nodules as living ones, and one can find the unaltered bacilli in the lungs even after a very long time; so here also absorption does not go on in the desired manner.

As these facts proved that tubercle bacilli in an unchanged state were useless for immunising purposes, I tried to make them absorbable by the action of chemicals. The only method that was at all of service in this respect consisted in treating the tubercle bacilli with dilute mineral acid or strong alkalies at boiling point. In this way one succeeds in altering the tubercle bacilli in such a way that they become completely absorbed in large masses from the subcutaneous tissue, yet it takes a long time. Not the slightest immunity was obtained in consequence, so we must assume that this chemical action brings about too extreme a change in the substance of the bacilli, and destroys their immunising qualities.

As there was nothing to be gained in this manner, I proceeded to extract the absorbable constituents from the tubercle bacilli and use them for immunising purposes, and I gave up using the whole bacilli.

At first I sought to do this with glycerine extracts, and this led to the discovery of tuberculin. Tuberculin has the extremely valuable property of setting up a characteristic reaction when introduced subcutaneously, and in very small quantities, into men or animals suffering from tuberculosis. To begin with, this peculiarity can be turned to account in recognising tuberculosis in the earliest stages—that is to say, at a time when the physical diagnosis leaves one in the lurch, and, of course, just at the time when prospects of therapeutic success are greatest.

The employment of tuberculin as a help to diagnosis, on which I laid the greatest stress in my first publication on tuberculin, has justified itself more and more in the course of time. It is used at the present day in most civilised communities for the early diagnosis of tuberculosis in cattle (*Perlsucht*.)

The systematic struggle against this far-spread disease is founded on it, and has already led to very good results. The fear that tubercle bacilli could be set in motion and carried away to healthy parts of the body in consequence of the reaction, has been proved a false one in the many thousand injections of tuberculin which have been made in cattle for this purpose; and this is in full agreement with my own experience in more than 1,000 cases where tuberculin

has been employed for the early diagnosis of tuberculosis in man. Dr. Nietner, Staff Physician, will shortly give an exhaustive report on this matter. Moreover, in these cases nothing could ever be recognised to support the view of mobilisation and general diffusion of the tubercle bacilli.

In the face of such experience the absurd prejudice about tubercle bacilli being set in motion ought finally to be abandoned, and tuberculin be turned to account in the struggle against human tuberculosis on the analogy of the fight against this disease in cattle. I can only here repeat what I have said on a former occasion, that in tuberculosis prophylaxis is of infinitely more importance and benefit than all therapeutics.

The further value of tuberculin consists in its employment for treating tuberculosis. Since after every tuberculin reaction an unmistakable improvement occurs, the obvious thing to do was to carry on the reactions so long as any improvement was obtained with it; but this cannot be carried on indefinitely, as the capability to react gradually disappears, and with it, of course, the action of the tuberculin, and finally there comes a stage of complete immunisation against tuberculin which may last some months. On the bacilli themselves the immunisation has no influence; it is purely a matter of toxin immunity and not bacterial. Unfortunately the capability to react has already disappeared before a complete cure has resulted. Relapses occur which have to be treated afresh with tuberculin reactions as soon as the reaction capability re-establishes itself. In this way, with the necessary skill and patience, one can obtain a cure, or at least considerable improvement, if not in all, certainly in very many cases of uncomplicated tuberculosis. I therefore would regard tuberculin as the best means against tuberculosis at present at our disposal, had I not succeeded in the mean time in producing a really bacterial-immunising preparation from cultures of tubercle bacilli. It was naturally ever my wish to attain to such a bacterial-immunising substance after the discovery of tuberculin.

Amongst the many investigations with that object in view which were later abandoned, I should like to mention one here which kept me busy for more than a year, as it is very instructive in many respects. It is a case of a preparation which was obtained by extracting the tubercle bacilli with a 10 per cent. normal caustic soda solution. The bacilli were well mixed up with the solution, which was let stand for three days at room temperature and frequently shaken up, then the supernatant fluid was filtered through filter-paper, and finally neutralised.



The fluid obtained in this way was clear, with a faintly yellow colour, but it was not quite free from tubercle bacilli, as it contained enough for from five to ten always to be visible in the microscope field of an ordinary cover glass preparation. However, they always lay separately, never in clumps. These were obviously tubercle bacilli that were quite certainly killed, as I established in previous investigations that they were dead after being 12-15 hours in a 10 per cent. normal caustic soda solution. This preparation was styled for short TA, because of its being an alkaline extract. Investigations carried on with this TA showed that it produced in very small doses quite similar reactions to tuberculin, only the reactions lasted somewhat longer—the reaction capability also lasted longer—but the main point was that the results obtained with it proved to be more permanent than those obtained with tuberculin; relapses occurred less frequently, and at a later period. However, an objection to this preparation presented itself which finally compelled me to give it up. After a certain dose—a rather large one, I admit—abscesses occurred at the seat of injection which were completely sterile, and could be caused only by the preparation containing dead tubercle bacilli. The fluid was, in consequence, filtered through earthen filters, and the bacilli thus completely removed from it. On the surface of the filter there remained behind not only the bacilli, but a certain quantity of colloid substance as well, and it was soon proved that the filtered preparation no longer produced abscesses, but it was also no longer superior to ordinary tuberculin in activity. As the preparation also did not keep well and had always to be made fresh, I have finally given preference to the glycerine extract tuberculin, which has extraordinary keeping properties.

The fact of abscesses occurring regularly after a certain dose of TA appears to me a very important one. It teaches us, for instance, that a toleration—an immunisation against tubercle bacilli in their unchanged condition—is not to be expected in case of subcutaneous injection. At the beginning the smallest doses were injected which could only contain isolated bacilli, and were quite well absorbed; then they were gradually increased until the larger abscess-producing doses were reached, which happened between the 20th and 30th injections. If toleration of tubercle bacilli in large doses were possible, it should have happened here; but it did not, manifestly because the subcutaneous tissue, though in a condition quite capable of overcoming small quantities of dead tubercle bacilli, is absolutely incapable beyond a certain quantity. If one wished to introduce a large quantity of tubercle bacilli into the body through this channel, one would have to divide a number of injections over a corresponding



number of places in the skin, which, for practical reasons, is impossible.

This experience gained with T.A. gave me the idea of breaking up the tubercle bacilli, by whatever mechanical means was possible, to such an extent that they would be in a better condition for the absorbing elements of the body to attack, seeing that they are never absorbed under any circumstances in the whole state. I was, moreover, especially encouraged in this idea by observations which I had made in reference to the chemical behaviour of tubercle bacilli.

In the above-mentioned attempts which I made to bring tubercle bacilli into a state of solution by means of mineral acids and strong alkalies, I had discovered that tubercle bacilli contain two peculiar chemical bodies which both belong to the free fatty acids—the one fatty acid is soluble in dilute alcohol, and is easily saponified with caustic soda; the other is soluble only in boiling absolute alcohol or ether, and saponified with great difficulty. Both take up the so-called tubercle bacilli staining—that is, they become coloured intensely red with carbol-fuchsin, and retain this colour after treatment with dilute nitric acid and alcohol. However, since by this treatment the first of the two fatty acids is dissolved in the alcohol, and is extracted from the object under microscopic examination, it is only the second fatty acid, which is insoluble in cold alcohol, that remains in the tubercle bacilli when they are submitted to the staining process. This latter acid fixes the colouring matter, and is therefore the carrier of the peculiar tubercle bacilli stain. One can extract the fatty acid slowly out of the tubercle bacilli by means of hot caustic soda solution, and can easily follow the process of expulsion with the help of the microscope. The fatty acid leaves the bacillus as small drops, which can be stained, and which flow together into larger drops, while the bacilli keep their form from the beginning, but do not take up the specific stain of tubercle bacilli any longer, but only the same as other bacilli. These fatty acids produce a continuous layer inside the body of the bacillus, as the microscopic picture of the stained bacilli teaches us. They protect it from external attacks, and are the cause of its being absorbed with such difficulty.

Now, if tubercle bacilli were to be brought into a condition in which they could be absorbed, such a result must depend on the destruction of this protecting membrane.

The first attempts to do this failed entirely. All the grinding and crushing of tubercle bacilli with and without the addition of hard pulverising materials left them unchanged; and it was only

when I took well-dried cultures and worked them about for a long time in an agate mortar with an agate pestle, without adding anything to them, that I could recognise a diminution in the number of stainable bacilli, until finally only a few were left. To make certain and eliminate these as well, I suspended the substance obtained in this manner in water and centrifuged it. With the help of a very powerful centrifuge—4,000 revolutions in the minute, carried on for one-half to three-quarters of an hour—the fluid was separated into a whitish opalescent, but perfectly clear, transparent upper layer, which contained no longer any tubercle bacilli, and a slimy firmly adherent sediment. This latter was again dried, worked up in a mortar, and centrifuged as above. It also gave a clear upper layer and a firm sediment. This manipulation could be carried on till finally almost nothing was left except the impurities originally present in the culture, and such as got in accidentally later, such as shreds of cotton wool, dust, &c.

In this manner the entire mass of tubercle bacilli culture could easily be transformed into a series of perfectly clear fluids.

This experiment, which anyone can repeat for himself without difficulty, was the starting point for my further work.

First, I convinced myself by experiments on animals, and later on human beings, that the preparations obtained in this way were completely absorbable and never produced abscesses, provided they were well centrifuged and no longer contained any stainable tubercle bacilli. It turned out soon after, however, that only the first fluid differed in an important way from the succeeding ones; the second and successive fluids did not differ from each other. I have, therefore, called the upper layer, after the first centrifuging, Tuberculin O (TO for short); the residue left after the first centrifuging, and that has been further worked up, I have called TR.

Microscopic examination of the original material after it has been worked up shows that the bodies of the tubercle bacilli are not transformed into a uniform substance. One can see no longer any red-coloured masses after staining with carbol-fuchsin and counter-staining with methylene blue, nor are the small drops of fatty acid present; on the contrary, one finds in the microscopic field pale-coloured cloudy-looking areas surrounded by a border of dark blue drops—that is, the latter are collected together at the edge.

*(To be continued.)*

*Surgical Treatment of Gastric Ulcer.* By M. DIEULAFOY. Translated by G. M. Foy, M.D., F.R.C.S.I.; Hon. Fellow of the S. S. and Gynæcological Associations; Member of the Society of Anæsthetists, London; Surgeon to the Whithworth Hospital, Drumcondra.

At a meeting of the Academy of Medicine of Paris M. Dieulafoy read a paper on surgical intervention in ulcers of the stomach.

On the 13th November, 1895, there came under his care a man, bloodless, pale, with cold extremities, who had vomited two or three pints of blood. The case was diagnosticated as ulcer of the stomach. The patient had four successive attacks of hæmatemesis, in which he lost more than four pints of blood in a few hours. He was treated with an ice poultice to the region of the stomach, ergotine, milk, and soforth. In spite of all the treatment the patient died, and the autopsy revealed a large ulcer, such as Cruveilhier so graphically described. It was not until we had carefully washed the mucous membrane of the viscus that we discovered a small ulcer at the cardiac extremity, on the peritoneal extremity of which we found a small arteriole, into which, with some trouble, we could insert a pin point. This arteriole passed through the ulcer, and its walls finally became diseased and ulcerated, and from the ulcer so formed came the blood-flow that killed the patient.

M. Dieulafoy considers that if he had cut down on and opened the stomach he could have caught the bleeding vessel, and saved the life.

On the 13th of October, 1897, there came to his care a young man, pale and bloodless, who complained that in the crowded street he had had attacks of vertigo, and had vomited quantities of blood. He had had three consecutive attacks of hæmatemesis. M. Dieulafoy was fully decided to open the stomach, but the patient raised objections to the operation, and begged for its postponement. The usual remedies—the local application of ice, ergotine internally, and milk diet—were now tried. For the succeeding eight days there was no return of the bleeding, but the patient rejected the milk. On the morning of the ninth day he had a terrible attack of hæmatemesis, and M. Dieulafoy, on arriving at the hospital, found his patient moribund.

At his repeated and urgent solicitation M. Cazin opened the abdomen, drew out the stomach, and, finding nothing abnormal, replaced the viscus, unwilling to proceed further in the operation. Again M. Dieulafoy urged the opening of the stomach, and

this time M. Cazin made an incision 11 centimetres in length. Nothing was found except some liquid, a little blood, and some ulcers. Finally, by careful examination and cleaning of the mucous membrane of the viscus, a small bleeding point was found. M. Cazin closed the bleeding point with three fine sutures, and closed the opening in the wall of the stomach and abdomen. Twenty days afterwards the patient was completely cured.

Here, writes M. Dieulafoy, are two cases precisely alike. In one the patient dies, not having been operated on; in the other an operation is performed, and the patient lives.

In the discussion which followed M. Michaux reported a case of a young woman who suffered from severe attacks of hæmatemesis, which brought her to the point of death. After her last attack he performed a laparotomy, and examined the exterior of the stomach, but, finding nothing abnormal here, placed it unopened in the abdomen, and closed the abdominal wound. Soon after this a severe attack of melæna killed the patient. On examination a small bleeding point on the mucous surface was found to be the source of the hæmorrhage.

M. Gilbert reported a case in which, at his request, M. Hartman performed a gastro-enterotomy. The lesion was not discovered until after death, when it was discovered to be a superficial ulcer of the mucous membrane.

The author concludes by urging the operative treatment of hæmatemesis, due to simple ulcer of the mucous membrane of the stomach, as the only rational and successful method in such cases.

The radical measure recommended by M. Dieulafoy was not unanimously accepted.

M. Hayem drew attention to the fact that not infrequently in young people these attacks of hæmatemesis cease, even when they have been so severe as to menace the lives of the patients. As a resource he mentioned transfusion of blood, by which treatment he had successfully treated two moribund cases. He also referred to subcutaneous injections of salt and water and artificial serum as trustworthy remedies.

M. Lanceraux pointed out that hæmatemesis is sometimes due to hepatic derangement.

M. Fournier called attention to syphilis as an exciting cause for hæmatemesis, and related some severe cases successfully treated with iodide of potassium.

M. Cornil, who with M. Ranvier wrote the well-known work on pathology, confirmed M. Fournier as to the influence of syphilis in producing gastric ulcer.—*Gazette des Hôpitaux*.

# ROYAL ACADEMY OF MEDICINE IN IRELAND.

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President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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## SECTION OF ANATOMY AND PHYSIOLOGY.

President—D. J. COFFEY, M.D.

Sectional Secretary—A. BIRMINGHAM, M.B.

*Friday, February 4, 1898.*

The PRESIDENT in the Chair.

### *Exhibits.*

PROFESSOR FRASER showed (*a*) a specimen of left superior cava; (*b*) a heart in which a large hepatic vein opened into the coronary sinus; (*c*) cervical ribs; and (*d*) microscopic specimens showing a "pressure pouch" in a sheep embryo.

DR. H. C. TWEEDY exhibited a boy with a supernumerary digit attached to his right thumb.

DR. R. TRAVERS SMITH exhibited a man of over fifty years of age, with complete absence of both pectoral muscles on the right side.

### *The Teaching of Histology.*

The PRESIDENT, having thanked the Fellows of the Academy for the honour they had conferred on him in electing him President of the Section, said that as he was about to deal with a subject of a controversial character—namely, the Teaching of Histology—he had thought it better to treat it in a paper and invite discussion, rather than to make it an address. He thought it was the experience of most teachers of histology that a few months after the student had gone through his practical classes and lectures in this subject, the chief result which remained to him was that he possessed a more or less accurate knowledge of the structure of the tissues and organs, and that he had extended his knowledge of anatomy in the aspect of minute structure. In addition, he has become fairly skilled in the use of the microscope, and he is able to stain and mount a section. The more clever students

possess, as well, a knowledge of some special methods—those, for example, which are used in the study of the nervous system. But in the great majority of cases the student is quite incapable of making anything like a complete preparation of a tissue or organ for microscopic examination. He has forgotten what has been described to him of the *technique* of fixing, hardening, imbedding, &c., because he has never practised these processes for himself. He has been taught histology rather as an adjunct to anatomy, and not at all as a practical method of study and investigation. He has left the laboratory stored with valuable information indeed, but devoid of a practical knowledge, which could be of the greatest use and interest to him in the study of pathology, or in application to many branches of biological science. Again, the value of microscopic methods in teaching physiological chemistry is lost sight of. Micro-chemical methods could be made to very effectually complete this study, leading to a more comprehensive grasp and to more precise and practical knowledge. Without attempting anything like a course of micro-chemistry, a properly systematised course of histology would obviously include, in the study of the action of the ordinary re-agents, so many chemical demonstrations as to make the course a valuable help in teaching and learning physiological chemistry. It seemed to him most desirable, then, that the histological teaching should be so conducted as to make it more useful on the physiological side, as well as to make it thoroughly practical, so that the student will leave the laboratory equipped with something more than information—viz., a method of investigation. How can this be done? By extending the present course a little, he thought, and devoting say one-third of the whole to the study of the cell. Using the magnificent material at our disposal in almost all arthropod animals for a complete demonstration—first, of structure and of the action of the various re-agents employed in fixing, hardening, &c., then of staining, methods which would naturally be followed in investigating cell structure—our students would be taken over the whole field of histological *technique* and incidentally made acquainted with the methods and results of micro-chemistry. Histology would be taught in the rational way, beginning, so to speak, with its alphabet, and the gain to the student from all points of view would well be worth the additional labour—not very great—which it might impose on him.

PROFESSOR W. H. THOMPSON said he was sure that there could be no two opinions as to the advisability of giving students a course of cytology; but when he came to think of the already

pretty severe course of histology, together with practical physiology, which the ordinary medical student had to acquire in one or two years, he shrunk from it. He thought rather that it was the duty of the zoologist and botanist to teach the students cytology, and pass them on to the teachers of histology to be taught human histology.

PROFESSOR FRASER said that he had no doubt that the teaching of the subject would remain in possession of the histologist, and would not be undertaken by the anatomist, botanist, or zoologist. With regard to adding on to the ordinary histological course a cytological one as well, and asking students in a short time to know so many subjects, and conduct what would practically be more or less original investigation in histology, he was afraid that the ordinary student had not the time or the opportunity to do those things.

PROFESSOR MCWEENEY said it was the duty of the biologist to teach the student the structure and the properties of the cell. The psychological part of the work would thus be done in the pre-human-anatomy stage—that was, in the biology stage. For students who did not take out such a course of biology what he would urge was an attempt, on the part of the teacher of histology, to secure, by the better fixation of the tissues, a more accurate idea for the student of the real structure of cells, and, by higher microscopic powers, to get him to understand better what were the component parts of a cell. He would also suggest that the sections be cut of extreme thinness, and that the principles of staining be explained to the student. As regards the study of karyokinesis, pieces of embryonic organs taken at the proper time, and fixed in Flemming's or Hermann's solutions, would probably show the student almost every stage of mitosis.

PROFESSOR SCOTT said that what frightened him most in what Dr. Coffey said was the enormous length of time required to teach the things that he wanted. No doubt all these subjects were of considerable importance, but there was only a short three months in which to get through the organs of the body under the present conditions. If the course were extended he was afraid that they would have more than it was possible to do in the time.

PROFESSOR J. M. PURSER said that Dr. Coffey spoke of learning histology as if it were like learning to read, but he thought it would be rather better explained if it were likened to the way in which they learnt to talk. They learnt words as a whole first, and he thought that in learning histology it was a great deal better to take up the science in the order in which the knowledge of it had been gained, and



the last part gained was the knowledge of the cell. Some speakers spoke about how students should be taught the structure and the constitution of the cell, but he (Professor Purser) did not think that anyone present would venture to say what was the structure of a cell. Fixing and staining methods were very difficult, and for these and other reasons he thought that to begin with cytology would be to begin at the wrong end.

The PRESIDENT, in reply, said that he had not suggested that an extra course of cytology should be added to students, but what he did suggest, and still believed possible, was that a portion—and that a very large portion—of the present histological course might be devoted to the study of the various histological *methods*, applying them to the cell, not taking the study of the cell in any other sense than to utilise it to teach the student methods; and in this way sufficient interest and knowledge would be gained to enable students afterwards to follow histological subjects for themselves. Let them have a sufficient knowledge of method, and of the meaning of method, and with that he thought students would have learnt a good deal of physiological chemistry.

*The Effects of Peptones and Albumoses on the Kidney.*

PROFESSOR W. H. THOMPSON gave a preliminary communication dealing with the influence of peptones and albumoses on the kidney when injected into the circulation. The following is a short summary of the results at which he has arrived:—(1.) These substances do not exert so great an influence on the walls of the kidney blood vessels as they do on those of other splanchnic blood vessels. (2.) They cause a marked increase in the secretion of urine, the maximum occurring during the second hour after injection. (3.) The urine secreted is dilute, its percentage of urea and total nitrogen being diminished. (4.) The total amount of urea and nitrogen is notwithstanding considerably increased. (5.) Part of the peptone (or albumose) is excreted during the first hour after injection, but the greater part appears to be retained. The amount so retained, however, is not sufficient to supply enough nitrogen for the increased output of urea and other nitrogenous compounds. Professor Thompson pointed out that these results were in accordance with what we already know of the diuretic influence exerted by proteid food stuffs, and also with the period after injection at which their maximum effect is produced.

PROFESSOR PURSER thought that the increased secretion of urine was due to a specific action of the peptones on the cells of the kidney, and, if so, one would suppose that more of the peptone



ought to undergo secretion than had actually been the case, for it appeared that the excretion of peptone was completed in the second hour. It was clear that this substance must act chiefly on the blood-vessels of the intestine, and there must be a great difference in the structure of the blood-vessels of the intestine and the blood-vessels of the kidney if the apparatus in the kidney was so slightly affected by the peptones, whereas the tone of the vessels in the intestines is so completely changed. This, he said, was a very interesting point as to the relation between one kind of blood vessel and another.

*The Larynx in Marsupials, Cranio-cerebral Topography, &c.*

PROFESSOR J. SYMINGTON—

(a) Described the peculiarities of the larynx in certain marsupials and illustrated his communication by a series of microphotographs of sections of the larynx and the neighbouring structures, chiefly from pouch specimens.

(b) He exhibited a series of scapulæ to show the mode of ossification of its coracoid elements and discussed their morphological significance.

(c) He also gave a communication on a method he had adopted for demonstrating the relation of the skin and skull to both the external surface and the interior of the brain.

The paper was illustrated by specimens and a series of photographs.

PROFESSOR CUNNINGHAM said that he had listened to Professor Symington's papers with the greatest interest. He thought that the specimens which he had shown were probably the most beautiful specimens of cranio-cerebral topography he had ever seen. He (Prof. Symington) was perfectly right in saying that the surface should be always combined with the interior, and by his method he was able to do this. Formalin was of enormous help in such work. He concluded his remarks by expressing his appreciation of the way in which Professor Symington had fulfilled the duties of President of the Section for the last two years.

*Shape and Position of the Bladder in the Child.*

PROFESSOR BIRMINGHAM's paper on the shape and position of the bladder in the child was, owing to the advanced hour, taken as read.

The Section then adjourned.

## SECTION OF STATE MEDICINE.

President—H. C. TWEEDY, M.D.

Sectional Secretary—NINIAN FALKINER, M.B.

*Friday, February 18, 1898.*

The PRESIDENT in the Chair.

*The Housing of the Poor in Dublin.*

THE PRESIDENT in his opening Address called attention to this subject. [The paper will be found at page 289.]

*Animal Vaccine, with Lantern Demonstrations.*

DR. KNOX DENHAM stated that he had come to the conclusion that the bitterness of the outcry against vaccination, both in the present and in the past, would have been greatly mitigated had the operation of vaccination been performed in every case with the same care and attention to asepsis that are used in other surgical operations. He (Dr. Denham) being the director of the only calf-lymph institute in Ireland, and having visited the principal stations at home and abroad, wished to lay before the members of the Section some of the results of his experience. He believed that the best form of calf-lymph was that made in a glycerinated emulsion, glycerine being in every way preferable to either lanoline, vaseline, or lymph in the dried state, as on ivory points. Not only do the experiments made by Professor McWeeney at the Calf Vaccine Institute prove this, but Dr. Denham threw on the screen a series of plate cultures made by Dr. Blaxall, which clearly demonstrated that although numerous extraneous microbes exist in all fresh calf-lymph, storage of glycerinated calf-lymph from four to six weeks causes the total disappearance of extraneous microbes, the activity of the vaccine remaining perfect, whereas, with lymph treated with lanoline or vaseline, the original colonies of microbes continue rapidly to increase with the length of storage. Now that it was possible to produce a vaccine lymph active in its vaccine properties, yet otherwise sterile, all the objections of those who assert that in vaccination we introduce noxious matters into the arms of their children, other than vaccine lymph, are overcome. Dr. Denham then gave an account of the various processes used by him in the manufacture of calf-lymph in Dublin. He attached great importance to the advice of Mr. Freeman, F.R.C.V.S., in the selection of perfectly sound calves. This portion of the paper

was illustrated by a number of lantern slides, showing the different steps. He stated that no antiseptic of any kind is used, asepsis being obtained by the abundant use of sterilised water, scrupulous cleanliness through boiling of all instruments and corks, and the sterilisation of the capillary tubes in a hot air steriliser.

DR. A. NIXON MONTGOMERY asked Dr. Denham if he had found the same organisms in clear vaccine lymph (humanised) when taken from normal eighth-day vesicles? Dr. Denham had stated that when the lymph was taken directly from the calf it was swarming with these organisms, and yet, when introduced into the system of a child, it was perfectly active so far as vaccination went, and no untoward results followed. Dr. Montgomery thought it strange when so many organisms were in fresh calf-lymph that no effects should follow as a consequence of their presence. He had been using vaccine lymph (humanised) for the last 28 years with perfectly satisfactory results as regards the production of typical vaccine vesicles which ran a normal course, and were not followed by evil consequences, either present or remote; one result of carrying out the arm-to-arm method was that he had never seen a primary case that was insusceptible to successful vaccination.

DR. DONNELLY thought that Dr. Denham had demonstrated that by keeping lymph a good while in glycerine a good many organisms were removed. During the epidemic of small-pox nearly all the bad arms, he thought, were due to calf-lymph. At first during the epidemic the calf-lymph gave good results, then a crop of cellulitis, then a number of curious abortive vesicles, so that if they had now calf vaccine free from the organisms which gave rise to cellulitis, it was a good thing to remove the prejudices from the public mind.

The REGISTRAR-GENERAL said that although vaccine devoid of extraneous organisms was introduced into the system, yet there was a class of people who were completely devoid of common sense, and who would probably never be convinced that vaccination was of any use. He thought that they were greatly indebted to Dr. Denham and several others for promoting the preparation and preservation of lymph in its present form. He stated that Dr. Purcell had used glycerine as a means of preserving his lymph for the last twenty years or more.

DR. DOYLE said that a great many of the bad results following vaccination in bygone days were due to the knives and needles used, and not to the lymph. With regard to the micrococci demonstrated by Dr. Denham, he (Dr. Doyle) thought they were moulds and nothing else. He would be very nervous about using

any calf-lymph in which he saw such organisms. There were non-pathogenic organisms which were said to be harmless, but did they really know if this were so? Such micro-organisms paved the way for the entrance of pathogenic organisms by rendering the tissue dead, and thus opening the way for the pathogenic organisms. How easy it would be to produce a small portion of dead tissue by the incision, and prepare a way for deleterious organisms. Last year he vaccinated a child with French lymph. On the sixth day the child became very heavy, and died subsequently on the fifteenth day of tubercular meningitis.

DR. HORNE said that undoubtedly a very strong opinion existed in England against the use of humanised lymph—so strong, indeed, that a Royal Commission had been formed which had held very strong opinions practically in favour of calf-lymph. Sir R. Thorne Thorne advocated the use altogether of calf vaccine so far as England and Wales were concerned. Sir R. Thorne Thorne's conclusion was, "that it is desirable that vaccine, both primary and secondary, should be performed exclusively with vaccine lymph derived from calves." So far as Ireland was concerned Dr. Horne did not think that there was any objection to the use of humanised lymph, and experience simply bore out the fact that arm-to-arm vaccination was the most efficient form of vaccination. Bacteriologists had not really been able to solve the question as to what animal or humanised vaccine really was.

SURGEON-GENERAL POTTER had, during the small-pox scare, vaccinated himself, the members of his family, and servants in the house with calf-lymph. It was carried out three times with no result. Perhaps this was due to immunity from vaccination performed a short time previously. He had found arm-to-arm vaccination extremely successful when in India.

DR. DENHAM, in reply, threw another photograph on the screen to illustrate that the more glycerine there is the less microbes there are. He exhibited a tube containing material from which he thought it absolutely impossible to cultivate any noxious microbes. He believed that the phagocytes in children were extremely powerful, and destroyed the staphylococci which he had exhibited. He thought that great credit was due to Dr. Purcell in using glycerine for preserving lymph so long ago. He insisted on the complete absence of antiseptics in vaccination; pure asepsis was only to be used. Personally he had never had any bad results from primary vaccination.

The Section then adjourned.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ;

F.R.C.P.I. ; F. R. Met. Soc. ;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

## VITAL STATISTICS

*For four weeks ending Saturday, March 26, 1898.*

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Mar. 5	Mar. 12	Mar. 19	Mar. 26		Mar. 5	Mar. 12	Mar. 19	Mar. 26
<b>23 Town Districts</b>	28·7	32·5	29·3	26·9	<b>Limerick -</b>	32·3	29·5	18·2	14·0
<b>Armagh -</b>	28·5	7·1	23·5	21·4	<b>Lisburn -</b>	38·3	42·6	42·6	8·5
<b>Ballymena</b>	16·9	33·8	22·5	33·8	<b>Londonderry</b>	20·4	25·1	17·3	34·6
<b>Belfast -</b>	27·4	34·7	28·2	24·6	<b>Lurgan -</b>	36·5	9·1	27·4	18·2
<b>Carrickfergus</b>	17·5	5·8	29·2	40·9	<b>Newry -</b>	28·2	44·3	44·3	12·1
<b>Clonmel -</b>	24·3	58·4	34·1	0·0	<b>Newtownards</b>	28·3	17·0	39·7	17·0
<b>Cork -</b>	22·1	20·1	18·7	28·4	<b>Portadown</b>	21·7	49·5	49·5	18·6
<b>Drogheda -</b>	19·0	19·0	30·4	11·4	<b>Queenstown</b>	17·2	11·5	11·5	23·0
<b>Dublin -</b>	31·6	35·6	34·6	28·6	<b>Sligo -</b>	15·2	50·8	15·2	25·4
<b>Dundalk -</b>	20·9	25·1	12·6	41·9	<b>Tralee -</b>	22·4	0·0	50·4	50·4
<b>Galway -</b>	49·1	26·4	15·1	45·3	<b>Waterford</b>	37·8	27·9	28·9	43·8
<b>Kilkenny -</b>	23·6	61·4	42·5	37·8	<b>Wexford -</b>	45·2	45·2	31·6	31·6

In the week ending Saturday, March 5, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 20·9), was equal to an average annual death-rate of 20·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·8 per 1,000. In Glasgow the rate was 24·3. In Edinburgh it was 19·7.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 28·7 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in sixteen of the districts to 8·5 in Lisburn—the 9 deaths from all causes registered in that district comprising 1 from diphtheria and 1 from enteric fever. Among the 160 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 3 from whooping-cough, 4 from diphtheria, 13 from enteric fever, and 3 from diarrhoea. Three of the 5 deaths from all causes in Dundalk and 2 of the 19 deaths in Waterford were from influenza. The Registrar of the former district remarks—“Influenza is most prevalent for the past month.”

In the Dublin Registration District the registered births amounted to 221—116 boys and 105 girls; and the registered deaths to 218—105 males and 113 females.

The deaths, which are 7 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 32·5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 31·6 per 1,000. During the first nine weeks of the current year the death-rate averaged 31·6, and was 1·5 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 27, being equal to the number for the preceding week, and one under the average for the 9th week of the last ten years. The 27 deaths comprise 5 from scarlet fever (scarlatina), 7 from influenza and its complications, 2 from whooping-cough, 7 from enteric fever, 2 from diarrhoea, and 1 from erysipelas.

The weekly number of cases of scarlatina admitted to hospital, which had fallen from 28 in the week ended February 12 to 22 in the following week, and 13 in the week ended February 26, rose to 29. Nineteen scarlatina patients were discharged, 3 died, and 160 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week. This number does not include 20 patients who were under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of cases of enteric fever admitted to hospital was 24, being 8 under the admissions in the preceding week, but 8 over the number for the week ended February 19. Nineteen patients

were discharged, 2 died, and 127 remained under treatment on Saturday, being 3 over the number in hospital on that day week.

Diseases of the respiratory system caused 55 deaths, being 5 in excess of the average for the corresponding week of the last ten years, and 4 over the number for the previous week. The 55 deaths comprise 44 from bronchitis and 10 from pneumonia.

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In the week ending Saturday, March 12, the mortality in thirty-three large English towns, including London (in which the rate was 21·5), was equal to an average annual death-rate of 21·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25·0 per 1,000. In Glasgow the rate was 26·9, and in Edinburgh it was 23·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 32·5 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in seventeen of the districts to 9·7 in Clonmel—the 12 deaths from all causes registered in that district comprising 2 from diarrhoea. Among the 203 deaths from all causes registered in Belfast are 2 from whooping-cough, 2 from diphtheria, 2 from simple continued fever, 15 from enteric fever, and 2 from diarrhoea. The 29 deaths in Cork comprise 3 from measles. The Registrar for Tralee No. 2 District remarks—“Several cases of fever occurred in different parts of the district.”

In the Dublin Registration District the registered births amounted to 206—97 boys and 109 girls; and the registered deaths to 250—121 males and 129 females.

The deaths, which are 31 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 37·3 in every 1,000 of the population. Omitting the deaths (numbering 11) of persons admitted into public institutions from localities outside the district, the rate was 35·6 per 1,000. During the first ten weeks of the current year the death-rate averaged 32·2, and was 0·9 under the mean rate in the corresponding period of the ten years 1888–1897.

Thirty-one deaths from zymotic diseases were registered, being 4 in excess of the average for the corresponding week of the last ten years, and, also, 4 over the number for the previous week. They comprise 6 from scarlet fever (scarlatina), 11 from influenza

and its complications, 3 from whooping-cough, 1 from diphtheria, 5 from enteric fever, and 1 from diarrhoea.

The number of cases of scarlatina admitted to hospital was 22, being 7 under the admissions in the preceding week. Seventeen scarlatina patients were discharged, 2 died, and 163 remained under treatment on Saturday, being 3 over the number in hospital on that day week. There were, in addition, 20 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital fell to 20. Sixteen patients were discharged, 6 died, and 125 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had risen from 41 for the week ended February 19 to 55 for the week ended March 5, further rose to 61, or 7 over the average for the corresponding week of the last ten years. The 61 deaths consist of 46 from bronchitis, 14 from pneumonia, and 1 from pleurisy.

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In the week ending Saturday, March 19, the mortality in thirty-three large English towns, including London (in which the rate was 21·6), was equal to an average annual death-rate of 21·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·1 per 1,000. In Glasgow the rate was 26·4, and in Edinburgh it was 23·0.

The average annual death-rate in the twenty-three principal town districts of Ireland was 29·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in seventeen of the districts to 16·8 in Tralee—the 9 deaths from all causes registered in that district comprising 1 from typhus and 2 from whooping-cough. Among the 165 deaths from all causes registered in Belfast are 1 from measles, 2 from whooping-cough, 3 from diphtheria, 1 from simple continued fever, 10 from enteric fever, and 2 from diarrhoea. The 11 deaths in Londonderry comprise 1 from typhus, 5 from whooping-cough, and 1 from diarrhoea. The Registrar for Tralee No. 2 District remarks—“Several cases of enteric fever were sent to hospital during the week.”

In the Dublin Registration District the registered births amounted to 210—117 boys and 93 girls; and the registered deaths to 237—109 males and 128 females.

The deaths, which are 27 over the average number for the cor-



responding week of the last ten years, represent an annual rate of mortality of 35·3 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 34·6 per 1,000. During the first eleven weeks of the current year the death-rate averaged 32·5, and was 0·4 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 30, being 2 over the average for the corresponding week of the last ten years, but 1 under the number for the previous week. The 30 deaths comprise 4 from scarlet fever (scarlatina), 11 from influenza and its complications, 3 from whooping-cough, 1 from diphtheria, 7 from enteric fever, 2 from diarrhoea, and 1 from erysipelas.

Twenty-three cases of scarlatina were admitted to hospital, being 1 over the admissions in the preceding week, but 6 under the number for the week ended March 5. Thirty-two scarlatina patients were discharged, and 154 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week. There were, in addition, 18 convalescents at Beneavin, Glasnevin.

The decline in the number of cases of enteric fever admitted to hospital, noted in the returns for the two weeks preceding, continued, the admissions being 14 only. Twenty-four patients were discharged, 3 died, and 112 remained under treatment on Saturday, being 13 under the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system fell to 42, or 7 under the average for the corresponding week of the last ten years. The 42 deaths consist of 35 from bronchitis and 7 from pneumonia.

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In the week ending Saturday, March 26, the mortality in thirty-three large English towns, including London (in which the rate was 20·0), was equal to an average annual death-rate of 20·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·9 per 1,000. In Glasgow the rate was 25·1 per 1,000, and in Edinburgh it was 23·4.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 26·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in seventeen of the districts to 11·2 in Tralee—the 9 deaths from all causes registered in that district

comprising 2 from whooping-cough. Among the 144 deaths from all causes registered in Belfast are 3 from whooping-cough, 1 from diphtheria, 8 from enteric fever, and 2 from diarrhœa. The 41 deaths in Cork comprise 1 from typhus, 1 from whooping-cough, 1 from diphtheria, and 4 from enteric fever. The 22 deaths in Londonderry comprise 2 from whooping-cough and 1 from diphtheria.

In the Dublin Registration District the registered births amounted to 197—113 boys and 84 girls; and the registered deaths to 198—79 males and 119 females.

The deaths, which are 16 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 28·6 per 1,000. During the first twelve weeks of the current year the death-rate averaged 32·2, and was 0·6 under the mean rate in the corresponding period of the ten years 1888—1897.

The deaths from zymotic diseases, which had been 31 and 30 in the two preceding weeks, fell to 22, or 6 under the average for the corresponding week of the last ten years. The 22 deaths comprise 2 from scarlet fever (scarlatina), 9 from influenza and its complications, 3 from whooping-cough, 6 from enteric fever, and 1 from choleraic diarrhœa.

Twenty-four cases of scarlatina were admitted to hospital against 23 in the preceding week and 22 in the week ended March 12. Twenty-two scarlatina patients were discharged, 1 died, and 155 remained under treatment on Saturday, being 1 over the number in hospital on that day week. There were, besides, 10 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital rose to 21. Twenty patients were discharged, 2 died, and 111 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 38, being 13 below the average for the corresponding week of the last ten years. The 38 deaths consist of 26 from bronchitis and 12 from pneumonia.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of March, 1898.*

Mean Height of Barometer, -	-	-	29·969 inches.
Maximal Height of Barometer (25th, 9 a.m.), -	30·339	„	
Minimal Height of Barometer (29th, 9 p.m.), -	29·428	„	
Mean Dry-bulb Temperature, -	-	-	41·4°
Mean Wet-bulb Temperature, -	-	-	39·0°.
Mean Dew-point Temperature, -	-	-	36·0°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·214	inch.	
Mean Humidity, -	-	-	82·0 per cent.
Highest Temperature in Shade (on 18th), -	59·3°.		
Lowest Temperature in Shade (on 5th), -	30·8°.		
Lowest Temperature on Grass (Radiation) (on 5th), -	-	-	28·5°.
Mean Amount of Cloud, -	-	-	54·1 per cent.
Rainfall (on 16 days), -	-	-	1·041 inches.
Greatest Daily Rainfall (on 27th), -	-	-	·231 inch.
General Directions of Wind, -	-	-	W., N.E., N.W.

*Remarks.*

March proved the coldest month of the winter of 1897-98. Nevertheless, its mean temperature was only fractionally below the average—0·4°. This result was brought about by the occurrence of a warm spell from the 15th to the 19th, inclusive. After the 23rd very cold weather held to the end of the month, a bitter N.E. gale blowing on the 24th and 25th. Snow or sleet fell in Dublin on 9 days, hail on 8 days.

In Dublin the arithmetical mean temperature (42·7°) was somewhat below the average (43·1°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 41·4°. In the thirty-two years ending with 1897, March was coldest in 1867 and 1883 (M. T.=39·0°), and warmest in 1893 (M. T.=48·1°), and in 1868 (M. T.=47·3°).

The mean height of the barometer was 29·969 inches, or 0·053 inch above the corrected average value for March—namely, 29·916 inches. The mercury rose to 30·339 inches at 9 a.m. of the 25th, and fell to 29·428 inches at 9 p.m. of the 29th. The observed range of atmospheric pressure was, therefore, 0·911 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 41·4°. Using the formula, *Mean Temp. = Min. + (max. — min. × ·485)*, the M. T. becomes

42·5°. The arithmetical mean of the maximal and minimal readings was 42·7°, compared with a twenty-five years' average of 43·1°. On the 18th the thermometer in the screen rose to 59·3°—wind, W.S.W.; on the 5th the temperature fell to 30·8°—wind, W.S.W. The minimum on the grass was 28·5°, also on the 5th.

The rainfall was 1·041 inches, distributed over 16 days. The average rainfall for March in the twenty-five years, 1865–89, inclusive, was 2·061 inches, and the average number of rainy days was 16·5. The rainfall, therefore, and also the rainy days, were below the average. In 1867 the rainfall in March was very large—4·972 inches on 22 days. On the other hand, the smallest March rainfall was ·288 inch on 8 days in 1893.

The atmosphere was more or less foggy in the city on 5 days—viz., the 7th, 8th, 11th, 30th, and 31st. High winds were noted on 11 days, reaching the force of a gale on two occasions—the 24th and 25th. Snow or sleet occurred on the 1st, 2nd, 5th, 7th, 24th, 25th, 26th, 27th, and 28th; and hail fell on the 1st, 4th, 7th, 24th, 25th, 26th, 27th, and 28th. The temperature exceeded 50° in the screen on 9 days, compared with 14 days in 1897, 21 in 1896, 13 in 1895, 22 in 1894, 26 in 1893, only 7 in 1892, 9 in 1891, and 19 in 1890. It fell to or below 32° in the screen on five occasions. The minima on the grass were 32°, or less, on 15 nights, compared with 9 nights in 1897, 8 in 1896, 10 in 1895, 12 each in 1894 and 1893, 25 in 1892, 20 in 1891, and 16 in 1890. The thermometer never rose to 60° in the screen, and never failed to reach 40°. A solar halo was seen on the 22nd. Lunar halos appeared on the 1st and 3rd. There was a brilliant aurora borealis on the evening of the 15th.

A continuance of cold and winterly weather signalised the period ended Saturday, the 5th. Prior to Thursday a depression of some depth travelled gradually south-eastwards to Central Europe from the Norwegian Sea. It brought to the British Isles fresh to strong westerly and afterwards northerly winds and cold showers. Hail, sleet and snow became prevalent on and after Tuesday, the 1st, and thunder and lightning were reported from various stations—from Holyhead on Wednesday, and Scilly and Prawle Point on Thursday. In the course of the last-named day a secondary depression formed over the S.W. of England, and subsequently travelled southwards to the S.W. of France. This system caused falls of cold rain and wet snow in the S. of England and parts of France—the heaviest downpour being in London (·35 inch). On Thursday and Friday the eastern quadrant of an anticyclone spread over Ireland from the Atlantic, and northerly winds and

cold weather prevailed. On Saturday the barometer fell steadily as a new depression approached from the N.W. This system caused a shift of wind to S.W. and S., clouds and a fall of wet snow in the afternoon. In Dublin the barometer fell to 29·658 inches at 9 p.m. of Saturday (wind, W.), after having risen to 30·061 inches at 9 p.m. of Friday (wind, N.). On Wednesday the screened thermometers rose to 46·6°, on Saturday they fell to 30·8°. The rainfall was ·164 inch on four days, ·094 inch being measured on Tuesday. Hail fell on Tuesday and Friday, snow or sleet on Tuesday, Wednesday, and Saturday.

The cold weather drew to a close in Ireland on Thursday, the 10th, and the last three days of the week ended Saturday, the 12th, were comparatively genial. In England, however, sharp night frosts were felt at the inland stations almost to the end of the week—a minimum of 23° in the shade being recorded at Loughborough on Friday morning. On Sunday a depression passed southwards across Ireland, where cold showers were prevalent. Sleet and soft hail fell on Monday morning, but the day finally proved brilliant, although the air was very keen. At 8 a.m. of Tuesday the barometer stood as high as 31·14 inches at Moscow. A band of high atmospheric pressure now moved southwards across the British Islands, so that quiet, calm, cold weather prevailed. As the ridge of high pressure passed by, westerly winds sprang up, accompanied by cloudy skies and a much higher temperature. This change first affected the North of Ireland and Scotland, and later on extended to the South of Ireland and parts of England. On Saturday there were a few light showers. In Dublin the mean height of the barometer was 30·129 inches, pressure ranging between 29·653 inches at 9 a.m. of Sunday (wind, W.N.W.) and 30·305 inches at 9 a.m. of Thursday (wind, N.W.). The corrected mean temperature was 42·0°. The mean dry-bulb reading at 9 a.m. and 9 p.m. was 40·7°. The screened thermometers fell to 31·1° on Tuesday and rose to 53·5° on Friday. Rain fell in measurable amount on two days, the total fall being ·044 inch, of which ·033 inch was registered on Sunday. North-westerly winds predominated.

The westerly type of weather held throughout the week ended Saturday, the 19th, which was much milder and also duller than its immediate predecessors. The barometer ruled low to the northward of Scotland, while it was relatively high over the Bay of Biscay, France, and the southern parts of the British Isles. On Sunday night a subsidiary depression passed eastwards across Ireland. On Tuesday morning another and deeper depression arrived off the Hebrides, causing squally weather and some rain-

fall. On the evening of this day brilliant aurora borealis was seen in the British Islands and Denmark. The next three days were cloudy, mild, and squally—the wind being S.W. or W. in direction. Very little rain fell except in the far North. Finally, on Friday night a V.-shaped or angular depression caused broken weather for the time being. Saturday was much cooler and fine throughout—the upper clouds still travelling from W.S.W., while the lower clouds and wind came from N. In Dublin the mean height of the barometer was 29·926 inches, pressure ranging between 29·705 inches at 9 p.m. of Friday (wind, W.S.W.), and 30·121 inches at 9 p.m. of Saturday (wind, N.). The corrected mean temperature was 48·3°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 47·4°. On Friday the screened thermometers rose to 59·3°, having fallen to 35·7° on Sunday. The rainfall was ·180 inch on three days, ·156 inch being measured on Friday. The prevailing wind was W.S.W. The aurora borealis on Tuesday evening was a very splendid display.

Cold throughout the week ended Saturday, the 26th, the weather became extremely severe and inclement on Wednesday, and so continued to the end of the period. During the first three days an anticyclone lay over the British Islands, the weather was fine and quiet, and the diurnal range of temperature was very large, sharp night frosts being followed by spells of warm sunshine by day. At Cambridge the thermometer rose to 51° in the shade on Sunday and to 54° on Monday, the night minima being 25° and 26° respectively. On Tuesday the barometer fell in Scotland and Ireland, and the wind shifted to S.W., as a depression advanced to our neighbourhood from the northward. By 8 a.m. of Wednesday the centre of this system had reached the Wash, whence it travelled to central Europe, growing deeper as it moved. Simultaneously the barometer rose quickly in the N., N.W., and W., with the result that baric gradients became very steep for northerly and north-easterly winds. Strong gales and blinding showers of hail, sleet and snow were reported during the last three days of the week from all exposed points on the British coasts, the S.E. of England suffering most severely. Ireland for the most part escaped the blizzard, but the east coast from Dublin southwards felt the fury of the gale and was swept by snow and hail squalls from time to time. A fresh decrease of pressure began on Friday, continuing to the end of the week. In Dublin the mean atmospheric pressure was 30·169 inches, the barometer ranging between 30·339 inches at 9 a.m. of Friday (wind, N.E.) and 29·823 inches at 9 p.m. of Saturday (wind also N.E.). The corrected mean

temperature was  $41.5^{\circ}$ . The mean dry-bulb reading at 9 a.m. and 9 p.m. was  $41.0^{\circ}$ . On Wednesday the screened thermometers rose to  $52.8^{\circ}$ ; on Monday they fell to  $31.9^{\circ}$ . The prevailing winds were N.W. and N.E. The rainfall was .132 inch on three days, .101 inch being measured on Saturday. The precipitation was chiefly in the form of snow, sleet and hail.

Although still cold for the time of year, the weather moderated in the closing period of the month (27th–31st). On Sunday, the 27th, a large and rather deep depression still lay over France and Germany, while an anticyclone was found covering the Gulf of Bothnia. At 8 a.m. the barometer was as low as 29.30 inches in France, whereas it stood at 30.61 inches at Herno-sand in Sweden. Strong N.E. winds, dull, cold weather, and rain, hail, and sleet were prevalent in most parts of the British Islands. The west and south of Ireland, however, enjoyed fine weather. Late on Tuesday night cold rain, sleet and hail fell heavily in Dublin. Gradients became much less steep after Sunday, so that the N.E. winds died down—on Tuesday, indeed, there was a light S.W. breeze for a time. Rain continued to fall in and near Dublin until the afternoon of the 30th, when a dry spell set in. The rainfall was .521 inch. The barometer ranged from 29.428 inches at 9 p.m. of Tuesday, the 29th (wind, W.), to 29.916 inches at 9 p.m. of Thursday, the 31st (wind, calm). The extremes of temperature both occurred on the latter day—the maximum being  $47.6^{\circ}$ , the minimum  $34.1^{\circ}$ . Northeasterly winds prevailed.

The rainfall in Dublin during the three months ending March 31st amounted to 4.570 inches on 48 days, compared with 7.069 inches on 57 days in 1897, 4.898 inches on 47 days in 1896, 9.084 inches on 52 days in 1895, 6.028 inches on 53 days in 1894, 5.196 inches on 49 days in 1893, 4.808 inches on 48 days in 1892, only 1.650 inches on but 32 days in 1891, 7.470 inches on 45 days in 1890, and a twenty-five years' average of 6.411 inches on 51.0 days (1865–1889, inclusive).

At Knockdolian, Greystones, Co. Wicklow, only .765 inch of rain fell on 12 days during March; and the total rainfall since January 1, 1898, equals 4.745 inches on 41 days. The corresponding figures for 1897 are 3.755 inches on 24 days, the total rainfall since January 1 having been 8.945 inches on 61 days. The maximal fall in 24 hours was .180 inch on the 26th.

The rainfall in March at Clonevin, Killiney, Co. Dublin, was 1.29 inches on 15 days, compared with 3.28 inches on 23 days in 1897, 2.61 inches on 23 days in 1896, 3.29 inches on 21 days in 1895, 1.11 inches on 14 days in 1894, .26 inch on 9 days in 1893,



·98 inch on 10 days in 1892, and a twelve years' (1885-96) average of 1·873 inches on 15·2 days. The maximum in the 12 years was 3·59 inches in 1888, the minimum was ·26 in 1893. At this station the total rainfall since January 1 was 4·61 inches on 44 days, compared with a fall of 7·59 inches on 61 days in the first quarter of 1897. On the 28th, ·23 inch fell.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in March was ·844 inch on 13 days, compared with 4·490 inches on 23 days in 1897, ·148 inch being registered on the 6th. The highest shade temperature at this climatological station was 59·0° on the 18th, the lowest was 31·2° on the 9th. Since January 1st, 4·767 inches of rain had fallen at the hospital on 40 days, compared with 10·086 inches on 57 days in the first quarter of 1897.

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#### CONDITIONS SIMULATING HERNIA.

M. WALTHER (*Gazette des Hôpitaux*) reports from the practice of M. Latouche, of Auton, three cases which were admitted to hospital as suffering from hernia, with symptoms so acute that immediate operation was deemed necessary. In the first case acute tuberculous peritonitis was found; in the second case, general peritonitis, cause unknown; and in the third, a myosarcoma, with peritonitis.

#### LITERARY NOTE.

THE Rebman Publishing Company announce the following new books as just ready, viz.:—"Tuberculosis of the Genito-Urinary Organs, Male and Female," by Professor N. Senn. "Orthopædic Surgery," by Dr. James E. Moore, and "Pathological Technique." A Practical Manual for the Pathological Laboratory, by Drs. F. B. Mellory and J. H. Wright. The Rebman Publishing Company also announce, conjointly with Mr. W. B. Saunders, of Philadelphia, that arrangements have been completed for the publication of an edition in English of the world-famed "Lehmann's Medicinische Handatlanten" (Medical Reference Atlases). Each volume will contain from fifty to one hundred coloured plates, besides numerous other illustrations in the text. The first volume, to appear almost immediately, will be an Atlas of Internal Medicine and Clinical Diagnosis, by Dr. Chr. Jakob, of Erlangen, edited by Professor A. A. Eshner, of Philadelphia. Others in active preparation are Atlases of "Legal Medicine," "Operative Surgery," "Laryngology," and "External Diseases of the Eye."



## PERISCOPE.

### CONDITIONS SIMULATING APPENDICITIS.

At a meeting of the Surgical Society of Paris, on the 19th of January last, M. Puffier reported (*Gazette des Hôpitaux*) a case of perforating ulcer of the duodenum occurring in a young man who was engaged in lifting a heavy weight of coffee. The symptoms so closely resembled those of appendicitis that a laparotomy was performed. On examination of the appendix it was found to be quite healthy. A *post-mortem* examination revealed the lesion in the second portion of the duodenum, the walls of which were very thin.

At the same meeting M. Michaux reported the case of a young woman who was admitted to hospital suffering from acute peritonitis. On the fifth day all the symptoms suddenly became greatly aggravated, and a perforation of the appendix was diagnosticated. M. Michaux performed a laparotomy, but failed to find the exciting cause of the peritonitis. A few days afterwards the patient died, and a small perforated ulcer of the duodenum was found. This was the second case of a perforating ulcer of the duodenum met with by M. Michaux.

### ULCERS OF THE STOMACH.

In a paper contributed to the *Gazette des Hôpitaux*, M. Chaput writes:—

“ I have operated on five patients who were suffering from gastric ulcer.

“ The first had an epigastric tumour which was considered to be cancerous. The operation was unsuccessful, and, on making the autopsy, an abscess was found lying in front of the pancreas and communicating with the interior of the stomach.

“ The second patient had also an epigastric tumour, together with the usual symptoms of gastric ulcer. Gastro-enterotomy was performed, and after two years the patient remains well.

“ In the third case the patient suffered for fourteen years from gastric ulcer. She had an epigastric tumour, vomiting, violent gastric pains, and acute pyrexia. Gastro-enterotomy was performed. The vomiting persisted, and on the third day from the operation the supplementary operation—entero-anastomosis—was performed, and the patient made a good recovery.

“ The fourth patient was diagnosticated by a specialist as suffering

from gastric ulcer ; the analysis of the gastric juice favoured the diagnosis. The patient some months afterwards presented a slow-growing, well-defined epigastric tumour. Gastro-enterotomy was performed successfully ; death, however, resulted not long after. From the symptoms it is very probable that the gastric ulcer underwent cancerous degeneration.

“ The fifth patient presented no signs other than those of pyloric narrowing. On opening the abdomen a small pyloric tumour was found, for which a pylorotomy was done. The patient is quite well, and digests his food without trouble two years after the operation. A histological examination of a section of the tumour reveals a cancerous kernel, surrounded with hypertrophied muscle-tissue.

“ The author concludes that an epigastric tumour is not pathognomonic of carcinoma, and that hydrochloric acid may be found in the gastric juice in the early stage of cancer.”

#### PERFORATION OF THE STOMACH.

M. GUINARD (*Gazette des Hôpitaux*) recently brought before the Surgical Society of Paris the case of a young woman who met with a cab accident. After the accident vomiting of a dark violet-coloured fluid commenced, and soon after she passed bloody stools. The day following the patient took the train to Paris. She came under M. Guinard's care five days after the accident, when he found her to be suffering from peritonitis. He performed a laparotomy, and came on a sub-phrenic abscess containing about a pint of grumous-like fluid. After some searching he found a small perforation of the lesser curvature of the stomach near the pylorus. He attached the perforated portion of the stomach to the superior wall of the duodenum. Five days after the patient was well.

#### RADIOGRAPH OF A VESICAL CALCULUS.

At the same meeting of the Surgical Society of Paris M. Brun exhibited a good radiograph of a vesical calculus in an infant.

THE DUBLIN JOURNAL  
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JUNE 1, 1898.

PART I.  
ORIGINAL COMMUNICATIONS.

ART. XXIII.—*Clinical Report of the Rotunda Lying-in Hospital, for One Year, November 1, 1896, to October 31, 1897.\** By R. DANCER PURROY, M.D., Master; T. HENRY WILSON, HENRY JELLETT, R. P. R. LYLE, Assistant Masters.

DURING the twelve months comprised in this Report 1,825 women were admitted to the maternity department, 1,448 were confined, 377 were discharged not in labour, and 2 died.

TABLE NO. I.—*Admissions to Maternity Department, 1896-7.*

—	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Total
Total number of Deliveries	119	120	108	108	86	129	106	118	139	119	113	121	1,386
Abortions	6	6	2	4	7	7	3	5	7	5	5	5	62
Total cases treated	...	...	...	...	...	...	...	...	...	...	...	...	1,448
Patients admitted, but discharged not in labour	34	29	31	34	40	30	24	33	41	36	25	31	377
Total Admissions	159	155	141	136	133	166	136	155	187	160	148	157	1,825

\* Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, April 27, 1898.

We have included in this table all who have been admitted to the maternity wards, a number of whom were detained in the hospital for varying periods, and discharged as they were not then in labour.

TABLE NO. II.—*Dispensary for Outdoor Patients.*

Number of First Attendances	Number of Repeated Attendances
4,655	5,585

TABLE NO. III.—*Showing Number and Nature of Cases Treated in the Extern Maternity, 1896-97.*

Total number of cases	2,007	Inversion of uterus	1
Abortions	267	Occipito-posterior	22
Curetting for abortion	69	Moles—	
Accidental hæmorrhage	8	Vesicular	1
Placenta prævia	8	Carneous	5
Post-partum hæmorrhage—		Hydrocephalus and spina	
Atonic	12	bifida	2
Traumatic	3	Hydramnios	1
Adherent placenta	19	Mania scuta	2
Breech	49	Rupture of uterus and de-	
Footlings	5	capitation	1
Brow	1	Imperforate anus	2
Face	3	Hour-glass contraction	1
Transverse	5	Children dead—	
Shoulder	2	Recent	47
Twins—		Macerated	11
Male	9	Putrid	3
Female	7	Premature	12
Male and Female	8	Non-viable	31
	19		104
Triplets—		Mortality—	
F. F. M. }		Pneumonia	1
F. F. M. }	2	Placenta prævia	1
Forceps	87	Inversion of uterus	1
Prolapse of cord	5	Pulmonary embolus	1
Version	7	Cardiac disease	1
			5

## ACCOUNT OF DEATHS IN EXTERN MATERNITY.

CASE I.—E. B., aged twenty-six, 3-para. Delivered November 7th, 1896. Normal labour; had normal puerperium till seventh day, when it was found on visiting her that her pulse was 160, and temperature 104·2° F., with foul lochia. She was douched and given strychnin and digitalis, with whisky ʒxii.

Under this treatment she improved gradually till November 19th, when acute croupous pneumonia supervened, and she died on November 21st, being the fourteenth day.

CASE II.—M. S., aged thirty-four, 8-para. Delivered July 31st, 1897. Placenta prævia lateralis. When first seen she was collapsed from hæmorrhage, and still bleeding; os two and a half inches in diameter, vertex presentation, membranes unruptured. As the patient was in labour, the membranes were ruptured; the hæmorrhage however continued, and accordingly internal version was performed and a foot brought down; hæmorrhage then ceased. Patient delivered herself of a living child. As collapse continued a whisky enema was given and also whisky by the mouth; she, however, sank and died half-an-hour after delivery.

CASE III.—J. S., aged thirty-eight, 4-para. Delivered September 22nd, 1897. Five months' miscarriage. No interference. An aortic systolic murmur was diagnosticated at time of confinement. Patient was seen by a student on the tenth day, who reported her quite well; on the twelfth day she suddenly got seriously ill, and sent for dispensary doctor, but died before his arrival.

CASE IV.—M. G., aged forty, 8-para. Delivered September 24th, 1897. Breech presentation—was attended by a student; third stage, 1 hour and 20 minutes. Patient died fifteen hours later; *post-mortem* examination revealed a complete inversion of the uterus.

CASE V.—M. T., aged twenty-two, 1-para. Delivered October 11th, 1897, by forceps on account of prolonged second stage. She was seen two days before delivery, when she had a temperature 103° F., pulse 120, respirations 36, with acute bronchitis and signs of phthisis. Temperature remained high, and on the evening of fifth day she suddenly developed puerperal mania; after administration of  $\frac{1}{2}$  grain morphin hypodermically she passed a quiet night. She had a second maniacal attack next day, which, however, soon passed off and did not recur. All her symptoms improved rapidly till the ninth day, when her condition was normal, and continued so until five days later, when, while sitting up in bed, she suddenly fell dead. Pulmonary embolus.

#### INTERESTING CASES IN EXTERN MATERNITY.

CASE I.—M. M., aged thirty-five, 4-para. Delivered November 6, 1896. Nine hours in labour; triplets—all vertex—two females and one male, all alive; one placenta.

**CASE II.**—M. D., aged thirty-eight, 3-para. Delivered November 17th, 1896. Four hours in labour; triplets—vertex, breech and vertex—two females and one male, all alive; one placenta, very large; three sacs—the second and third having to be ruptured. Patient received the Queen's Bounty.

**CASE III.**—M. C., aged thirty-one, 3-para. Delivered November 26th, 1896. Transverse presentation, 7½ months' pregnancy. There was slight ante-partum hæmorrhage. Right shoulder and hand presented. Patient in strong labour, and in severe pain, the shoulder being fixed at the pubes; the trunk, limbs, shoulders, and head were expelled in succession. Child dead.

**CASE IV.**—M. D., aged thirty, 7-para. Delivered April 6th, 1897. Neglected shoulder presentation, complicated with rupture of uterus. Full time pregnancy. Decapitation. Patient, who was of very intemperate habits, complained of having received a severe kick on the lower part of the abdomen on evening of April 4th; during the following two days she sent on three occasions to the hospital, but not until the third occasion would she allow of any examination whatsoever. She had then been in strong labour for five and a half hours, with severe pain in the hypogastrium; a hand was seen protruding from the vulva, the membranes being intact. The extern maternity assistant, Dr. Lyle, was sent for, and, on arrival (the membranes having in the meantime ruptured) examined the patient under an anæsthetic, and, finding the shoulder well down in the pelvis with the uterus tightly contracted down on the child, refrained from any interference, but sent for Dr. Wilson, the Assistant-Master on duty.

The child was lying in an oblique position, dorso-anterior, with head to right; the left shoulder was firmly fixed in the pelvis, with corresponding hand and forearm protruding at the vulva; all the ribs of left side were easily felt bulging down into vagina. On passing hand into uterus that organ was found ruptured on right side; the greater part of head, however, was held within the uterus by the impaction of the shoulder; the intestines could be felt with the tips of the fingers; the umbilical cord was flaccid and pulseless.

Decapitation was performed with Braun's blunt hook; after which the body of the child was easily delivered by traction on the arm, and the head by pressure on the fundus, with the left hand guiding it, in order to protect maternal soft parts.

The placenta was removed manually.

The rent in the uterine wall was about three inches in length, situated in lower segment to the right and posterior; a thick plug of iodoform gauze was passed through the rent into the peritoneal cavity, for the purpose both of drainage and to keep the intestines out of the wound, the lower end of the gauze being in the vagina. A hypodermic of ergotin in was given, and the patient, on account of destitution, was removed to the hospital. She made an uninterrupted recovery, the gauze was removed in twenty-four hours; her temperature never exceeded 99·2° F., and she was discharged well on the 22nd of April.

We consider that rupture of the uterus often takes place without any of the alarming symptoms which are recorded in the text books, and frequently is diagnosticated only when the fingers are passed into the uterus to remove the placenta, or with some other object.

The treatment adopted in this case appears to be most satisfactory in cases of uterine rupture uncomplicated by severe hæmorrhage, or the laceration of any other viscus.

TABLE NO. IV.

*Cases treated in Intern Maternity during the Year 1896-97.*

Total number of cases	1,448	Version	8
Primipara	519	Perforation and craniotomy	2
Abortions	62	Eclampsia	1
Pelvic presentations	54	Insanity—Mania	4
Shoulder and upper extremities	2	Melancholia	1
Face	3	Phlebitis	1
Brow	1	Rupture of uterus	1
Hydramnios	4	Mynoma cherii	1
Occipito-posterior	27	Intra-uterine fracture of forearm	1
Twins—		Rupture of cervix and vagina	4
Male	6	Laceration of perineum	230
Female	6	Meningocele	2
Male and Female	10	Children died in hospital	39
	22	born dead—	
Prolapse of funis	8	Recent	21
Placenta prævia	4	Macerated	19
Accidental hæmorrhage	8	Premature	23
Post-partum hæmorrhage	12	Putrid	2
Adherent and retained placenta (removed manually)	17	Non-viable	18
Myoma	8		78
Deformed pelvis	4	Morbidity	78
Induction of premature labour	8	Mortality—	
Forceps	56	Rupture of uterus	1
		Septic endometritis	1
			2

TABLE No. V.—Deaths.

NAME	Admitted	Delivered	Died	Cause of Death
A. M'D.	Dec. 23, '96	Dec. 28	Dec. 31	Rupture of uterus and bladder. Craniotomy. Septic endometritis.
L. D.	Feb. 8, '97	Feb. 8	Feb. 21	

We regret to have to record two deaths, both of which we ascribe to puerperal causes.

**CASE I.**—For account of death of A. M'D., see under heading Perforation and Craniotomy, page 472.

**CASE II.**—L. D., aged twenty-eight, 2-para. Admitted, 7th February, 1897. Patient suffering from tertiary syphilis, ulcers on both legs, with extensive sloughing ulceration of labia majora. Scrupulous cleanliness was observed, as far as possible, previous to delivery. No vaginal examinations were made. Delivered next day. Eighteen hours in labour, child still-born; third stage 35 minutes, placenta and membranes came away entire. The vulva was dusted with iodoform. On the morning of the second day her temperature rose to 101° F. The lochia was slightly foetid, a vaginal douche was given, but the evening temperature was 102·6° F.; the uterus was douched, but nothing abnormal was noticed. R. Quin. sulph. gr. v., every fourth hour. After this the temperature fell for three days. On the sixth morning the temperature rose to 103° F., and pulse to 115, and in the evening to 105° F., pulse 120. The uterus was curetted with Rheinstädter's spoon, but very little came away; the lower part of the vagina was of a greyish colour, covered with a large puerperal ulcer, which was dusted with iodoform. The temperature dropped two degrees for 48 hours, but then rose and fluctuated between 103° F. and 105° F.; the pulse varied from 115 to 146, until the time of her death.

All through the lochia were scanty, except when the uterus was douched, which was done daily. Patient was on from ʒviii. to ʒxx. whisky daily, but it had little or no effect on the pulse-rate. She became exhausted and died on the 13th day.

*Post mortem* examination showed the uterus slightly enlarged, and covered by a grey, sloughing membrane, which extended into the vagina. Other organs healthy.

From the *post-mortem* examination of this case we think



that, in addition to curetting and douching, it might have been beneficial had the uterus been plugged with iodoform gauze, as recommended by Dührssen.

TABLE NO. VI.—*Morbidity.*

Temperature	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct	Total
100·8° F. and under 102·2° F.	7	1	8	5	1	8	8	1	9	2	8	9	52
102·4° F. and under 104° F.	2	3	0	3	1	1	1	—	1	3	3	4	22
104° F. and under 105° F.	1	—	—	—	—	—	—	—	—	—	—	—	1
105° F. and over.	—	—	—	1	—	—	—	—	—	—	2	—	3
Total monthly morbidity	10	4	8	9	2	4	4	1	10	5	8	13	78

There were, during the twelve months, 78 cases in which the temperature rose on one or more occasions to 100·8° F. or over. Four of these followed macerated foetus, 5 were due to puerperal ulcer, 3 to mastitis, 2 to syphilitic sores, 1 to pneumonia, 2 to puerperal mania, and 1 to advanced phthisis. There were only 15 cases in which it was considered necessary to administer a uterine douche; for the remainder an aperient or a simple vaginal douche of creolin proved sufficient.

#### FACE AND BROW PRESENTATIONS.

All the face presentations terminated naturally. There was one brow presentation in the extern maternity which terminated as a face, on the forehead of which there was a small caput. There was also one brow presentation in the intern maternity; it was a seven and a half months' pregnancy, and was delivered by forceps on account of delay in the second stage. It was born as a vertex.

TABLE No. VII.—*Application of Forceps.*

I.-para.	49	V.-para.	1
II.-para.	4	VII.-para.	1
IV.-para.	1		

SUB-TABLE A—*Indications for Application.*

Delay in 2nd stage over four hours*	45
Uterine inertia	1
Prolapse of cord	2
Brow	1
Twins—uterine inertia, 1st child	1
Threatened death of foetus	4
Acute mania	1
Threatened rupture of uterus	1

\* There were four occipito-posterior positions.

SUB-TABLE B.  
*Ages of Primiparae.*

17-25	20
26-30	20
31-35	4
36-45	5

SUB-TABLE C.  
*Result to Child.*

Alive	52
Dead	4

The percentage application of forceps in the extern maternity was 2·12 per cent., and in the intern 4·04 per cent. This great difference is most probably due to the fact that the proportion of primiparae to multiparae is far greater in the intern maternity than in the extern.

Forceps were applied in cases of delay of four hours in the second stage, with material benefit to the mother, and greater safety to the child; and we consider that the results obtained—more particularly as regards the life of the child—amply justify us in not delaying longer.

#### PERFORATION AND CRANIOTOMY.

Perforation and craniotomy were performed in two cases.

CASE I.—A. M'D., 6-para, admitted December 23rd, 1896. Her first four children were born dead at full term; fifth was a footling presentation, and the head was delivered with extreme difficulty, the child being alive. On 27th December, at 8 o'clock, p.m., she came into labour, and at 11 o'clock the os was almost

fully dilated, with the head above the brim. She had good pains all night, but her symptoms gave no cause for anxiety till next afternoon, when her pulse began to rise, the temperature remaining normal, and the head still above the brim.

At 3 p.m., she suddenly became very collapsed, her temperature fell, her pulse became rapid and feeble, and it was thought advisable to deliver at once. The foetal heart could not be heard. Craniotomy was performed, and the child extracted easily. During the evening her pulse became very rapid and intermittent—140 to 150. The lochia were normal in amount. The collapse continued, and she died on December 31st, 1896.

*Post-mortem* examination showed a considerable amount of hæmorrhage into the abdominal cavity, and a large hæmatoma the size of a cocoa-nut in the left broad ligament. There was a large laceration, several inches in length, running transversely across the fundus of the bladder; and a second circular contused laceration extending from the lower part of the posterior wall of the bladder into the lower uterine segment. This second laceration was most probably caused by the parts becoming nipped between the descending head, and an osseous projection on the posterior aspect of the symphysis. This projection was about the size of a hazel-nut and materially narrowed the true conjugate.

CASE. II.—M. F., aged forty, 8-para. Admitted March 2nd, 1897, from extern maternity in strong labour for many hours previously. The os was three-fifths dilated; head not engaged; abdomen very prominent, and child dead. Craniotomy was performed with Auvard's instrument. Extraction was easy, and convalescence normal.

#### INDUCTION OF PREMATURE LABOUR.

Premature labour was induced in three cases—twice for contracted pelvis, and once for cardiac disease. In all three cases Krauze's method, the introduction of bougies, was used. It was successful in two cases, but in the third, that of cardiac disease, the bougies failed to bring on labour, although inserted twice.

Ten laminaria tents were then placed in the cervix, but, as they also failed to bring on labour, bi-polar version was performed, and a leg brought down. The child was born alive, but died in thirty minutes. The other children went out well. In every case convalescence was normal.

TABLE NO. VIII.—*Protopse of Funis.*

Name	Treatment	Result to Child	Presentation	Period of Pregnancy	Remarks
M. B.	Version .	Alive	Vertex.	Full time	Asphyxia pallida. Schultzed successfully.
J. K.	Version .	Alive	Vertex.	Full time	Os nearly fully dilated. Reposition failed.
A. B.	Forceps ..	Alive	Vertex	Full time	Membranes ruptured some time.
E. S.	Forceps .	Alive	Vertex	Full time	Os fully dilated.
B. W.	Left to nature	Alive*	?	6th month	Placenta prævia lateralis.
N. S.	Bi-polar podalic version	Dead	Transverse	6th month	Reposition failed. Os admitted 3 fingers.
T. S.	Left to nature	Dead	?	5th month	—
T. F.	Traction with finger	Alive	Breech	8th month	First of twins

\* Died a few minutes after.

TABLE NO. IX.—*Accidental Hæmorrhage.*

Name	Treatment	Period of Pregnancy	Result to Child	Remarks
M. M'G.	Left to nature	8th month	A.	Was in strong labour; hæmorrhage not severe.
M. C.	Vaginal plug and binder	8th month	D.	Breech presentation.
M. L.	Membranes ruptured	8th month	A.	Hæmorrhage considerable; os $\frac{3}{4}$ dilated; labour proceeded rapidly after rupture of membranes.
N. E.	Vaginal plug and binder	7th month	D.	High temperature on admission; plug left 4 hours, and on removal child at once expelled by strong pains; good recovery.
M. H.	Membranes ruptured	8th month	A.	Footling; os $\frac{3}{4}$ dilated; hydramnios; good pains.
M. A. F.	Vaginal plug and binder	9th month	D.	Strong labour in 5 hours; plug removed; child, placenta, and large amount of clot came away.
K. T.	Membranes ruptured	7th month	A.	Os fully dilated on admission.
E. K.	Membranes ruptured	9th month	A.	Admitted in 2nd stage; delivery rapid.

There were 8 cases of accidental hæmorrhage admitted. In four of these, as the patient was in strong labour and the first stage well advanced, rupture of the membranes was found to be sufficient treatment. In three cases, however, the hæmorrhage was so severe that the vagina had to be plugged with boiled cotton-wool—after the usual aseptic precautions had been taken—and a tight abdominal binder with perineal band applied, to check the hæmorrhage and bring on labour.

In every case the mother made an uninterrupted recovery; but in those cases in which plugging had been performed the children were still-born. In these cases the hæmorrhage was so severe that in all probability the placenta had been completely detached. One patient only had a temperature of or above 100·8° F., and this, which she had on admission, fell the second day, and the puerperium continued uneventful.

From our experience of the treatment of accidental hæmorrhage, where the bleeding is severe and labour pains are absent, we are convinced that the firm application of the vaginal plug, combined with the use of a tight and carefully applied abdominal binder, with perineal band, is the only treatment that we can recommend with any confidence.

TABLE NO. X.—*Placenta Prævia.*

Name	Variety	Result to Child	Presentation	Period of Pregnancy	Treatment and Remarks
K. M'C.	Lateralis	D.	Vertex	8½ months	Bipolar version, and foot brought down
L. T.	Marginalis	D.	Vertex	8th month	Do. Do., considerable hæmorrhage into sac
D. D.	Centralis	D.	Vertex	8th month	External version, placenta perforated, and foot brought down
T. D.	Lateralis	D.	Vertex	8th month	Version, and foot brought down, delivered herself in two hours. High temperature, 101° F., evening of 4th day

There were four cases of placenta prævia, in all of which version was performed, and the subsequent delivery left to

nature. Two of these cases are included in our table of morbidity.

The patient L. T. showed a temperature of 103° F. immediately after delivery, that was within an hour after version; within twelve hours the temperature was normal, and continued so throughout the puerperium.

The second patient who showed morbidity, T. D., had a rise of temperature to 101° F. on the evening of the fourth day; a vaginal douche was given, and her temperature at once fell, and continued normal until she was discharged well on the tenth day.

**TABLE No. XI.—*Post-partum Hemorrhage.***

Name	Variety	Cause	Treatment	Remarks
A. M. A.	Atonic	Retained placenta	Manual removal	Twins
K. S.	Do.	Adherent placenta	Do.	Uninterrupted recovery
K. G.	Do.	—	Expression of placenta and hypodermic of ergot	Do.
M. S.	Do.	Retained membranes	Manual removal	Temperature rose slightly on 2nd day
L. G.	Do.	Do.	Do.	Uninterrupted recovery
T. Y.	Do.	Retained cotyledon of placenta	Do.	Do.
M. M.	Do.	—	Uterus douched and plugged with iodoform gauze	Do.
C. D.	Do.	Retained membranes	Manual removal	Do.
B. C.	Do.	Protracted labour; forceps	Hot uterine douche	Do.
A. L.	Do.	Retained membranes	Manual removal	Do.
R. B.	Do.	Adherent placenta	Do.	Do.
A. M.	Do.	Twins	Hot vaginal douche and ergot	Do.

**ECLAMPSIA.**

One case of eclampsia was treated during the year.

**CASE.**—The patient, M.G., aged eighteen, 1-para, was admitted on October 4th, 1897, when seven months pregnant. Her urine was scanty and highly albuminous, with considerable oedema of the lower extremities. She also complained of temporary loss of vision, and was very irritable and excited. She was given, at 6 50 p.m. on day of admission, gr.  $\frac{1}{2}$  morphin hypodermically; as the excitability continued, and as she had had two typical eclamptic seizures, she was given at 10 p.m. same evening gr.  $\frac{1}{4}$  morphin, which was repeated at 10 30 o'clock p.m. As a purgative, mist. sennæ co. was administered shortly after admission, and, as this did not act, croton oil (m.li.) was given with satisfactory results.

After the last hypodermic of morphin the patient was almost maniacal for several hours. She gradually became quieter, and finally fell asleep, and slept the whole of the next day. After this she rapidly improved, and three days after admission labour set in naturally, and she delivered herself of a living child, weighing  $3\frac{1}{2}$  lbs. Her temperature rose to  $101^{\circ}$  F. on evening of third day after delivery, and was  $100.8^{\circ}$  F. next evening, but after a uterine douche it fell to normal, and remained so.

During the first twenty-four hours in hospital she only passed  $\mathfrak{xxiv}$ . of highly albuminous urine, which increased to  $\mathfrak{xxxi}$ . during the next twenty-four hours, and to  $\mathfrak{xlvi}$ . during the next twelve hours, remaining at about  $\mathfrak{xl}$ . every twelve hours for three or four days following. It was frequently examined, and during the puerperium the amount of albumen rapidly diminished, there being only a trace of albumen in it the day she was discharged.

Patient and child left the hospital on eighth day after delivery, and were seen at the hospital six weeks later, both perfectly well.

**ABORTIONS.**

There were 62 cases of abortion admitted during the year. Some of these required no special treatment; only those in which the hæmorrhage was severe, or in which any part of the ovum was still retained, were interfered with. In all these cases the treatment adopted was the emptying of the uterus—if possible by expression of the contents. This failing, and the os being sufficiently dilated, the ovum was

removed by the finger, or if the latter condition was not fulfilled, by Rheinstädter's curette.

In one case the cervix was cicatricial owing to a previously performed Schröder's amputation, and as a result there was stenosis of the external os; it was dilated with Hegar's dilators, and a four months' foetus extracted by means of Schultze's spoon-forceps. The patient's temperature rose on the evening of the sixth day to  $104.6^{\circ}$ , and after a uterine douche fell to normal and remained so.

In another case the patient was admitted with hæmorrhage, which had been constant for two months previously. The uterus was up to the umbilicus, and she stated that she was three and a half months' pregnant; no foetal parts could be felt. The os was dilated by means of laminaria tents, a large quantity of clots escaped, and the patient coming into labour was delivered of a four months' foetus. Convalescence normal.

In another case the patient was admitted in the fourth month of pregnancy, with a foetid discharge. The membranes were ruptured, and the foetus could be felt lying partially in the dilated cervical canal. As the os externum was only the size of a threepenny piece it was divided bilaterally, and the foetus extracted by Schultze's spoon-forceps. Free hæmorrhage followed its removal; the uterus was curetted and plugged with iodoform gauze. Convalescence normal.

In another case the remains of an incomplete abortion were removed from one horn of a bicornuate uterus.

#### ICTERUS NEONATORUM.

There were about 20 cases of this affection during the year. They were all of a mild and transient nature, and in every case the jaundice had disappeared before the seventh day.

#### OPHTHALMIA NEONATORUM.

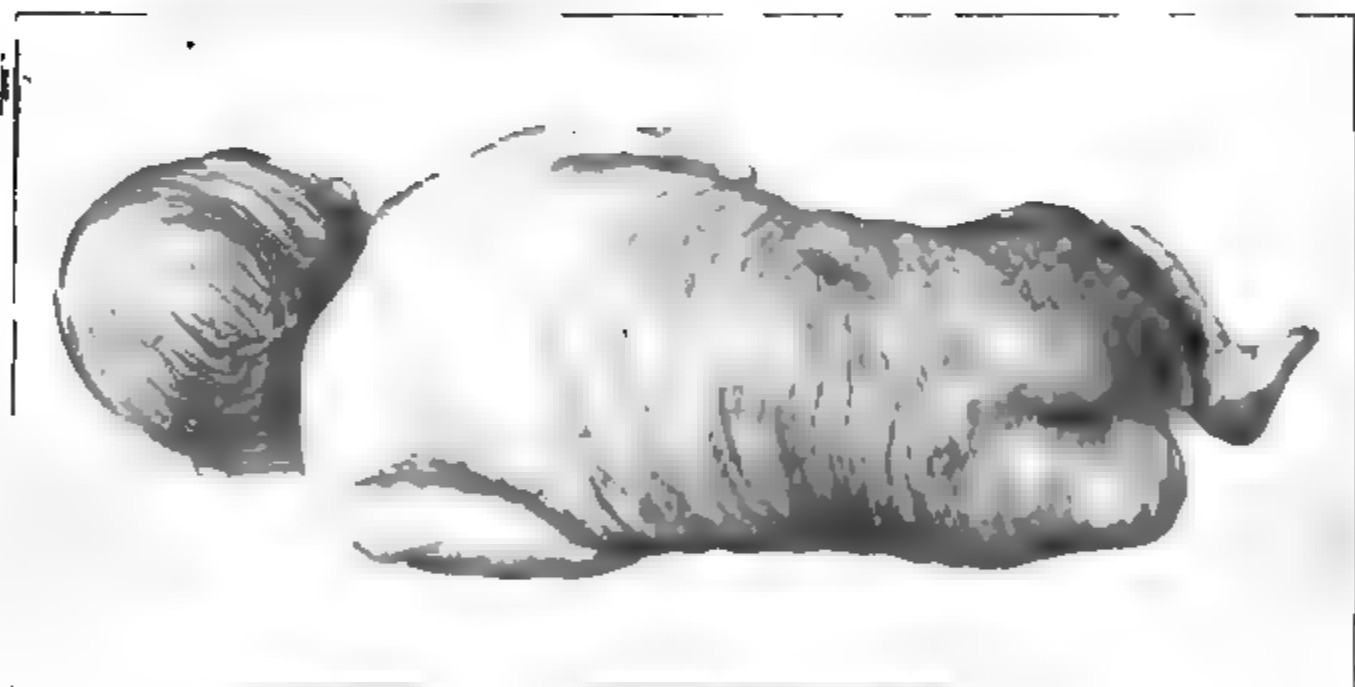
This was of very rare occurrence, owing, no doubt, to the prophylactic use of 1 per cent. solution of nitrate of silver, instilled, immediately after birth, into the eyes of every child born in the institution.





**PLATE I.**—A case of Hydrencephalocoele. The infant lived ten days.





**PLATE II.**—Pigmentation of the skin of the lower half of the body of an infant. (From a photograph.) There were two similar patches on the scalp.



The most modern form of incubator—the “*Couveuse Lion*”—has been purchased from the Lion Institute in Paris. It is easily worked and gives perfect satisfaction.

#### INFANT MORTALITY IN PELVIC PRESENTATIONS.

Of the 54 cases of pelvic presentation in the Intern Maternity—6 infants were macerated, 15 premature, and 33 full time. Of the premature infants—7 were alive and 8 dead. Of the full-time infants—30 were alive and 3 dead, being an infant mortality of 1 in 11, or 9 per cent. We do not count cases under this heading in which version was performed.

Of the 54 cases of pelvic presentation in the Extern Maternity—4 infants were macerated, 2 hydrocephalic, 8 premature, and 40 are recorded without particulars. Of the premature infants—4 were alive and 4 dead. Of the 40—28 were alive and 12 dead, being an infant mortality of 30 per cent.

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ART. XXIN.—*On the Mortality of Children in Ireland (1886-1896).*\* By LANGFORD SYMES, F.R.C.P. (Dubl.); Assistant Physician, Dublin Orthopædic Hospital; Physician to the Homes for Destitute Children; Late Clinical Assistant Physician, Hospital for Sick Children, Great Ormond-street, London.

I HAVE ventured to submit to you some calculations, which, though very few, are yet of great importance, and I hope of some interest, concerning the deaths of young children in Ireland. These may not, perhaps, afford much material for a lively argumentative discussion, but as an investigation conducted with considerable difficulty and very great care, I ask your kind attention for a few moments. Long columns of figures, death-rates, and percentages I have reduced to their smallest possible compass, and I have endeavoured to present to you, accurately, in a nut-shell the present state of child-life in this country.

For your convenience I have taken the liberty of handing

\* Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland, on Friday, April 29, 1898.

you these figures, and I trust they appear in an intelligible form.

In Table I. you will see the deaths of young children under 1 year and under 5 years in the whole of Ireland and our four large cities, for 10 years ending 1896, along with the total births and deaths at all ages.

**TABLE I.—Summary of Deaths of Children under 1 year and under 5 years in the whole of Ireland, Dublin, Belfast, Cork, and Limerick Cities, with total Births and Deaths for Ten Years ending December 31st, 1896. (From Annual Reports of the Registrar-General).**

*Total for Ten Years ending December 31st, 1896.*

	Total Births	Total Deaths	Deaths of Children under 1 year	Deaths of Children under 5 yrs.
Whole of Ireland ...	1,072,592	845,722	105,469	174,814
Dublin City ...	100,045	98,106	17,131	28,517
Belfast „ ...	95,727	50,224	14,620	26,110
Cork „ ...	32,013	28,757	2,821	4,355
Limerick „ ...	16,241	13,191	1,773	2,826

These are even better understood by a glance at Table II., which sets forth the rates per 1,000.

**TABLE II.—For Ten Years ending December 31st, 1896.**

	UNDER ONE YEAR. (Rate per 1,000 Registered Births). Out of every 1,000 Children born there die in 1st year	UNDER ONE YEAR. (Rate per 1,000 total Deaths). In every 1,000 total Deaths there die Children under 1 year	UNDER FIVE YEARS. (Rate per 1,000 total Deaths). In every 1,000 total Deaths there die Children under 5 yrs.
Whole of Ireland	98.6	124.7	206.1
Dublin City ...	171.2	183.9	306.2
Belfast „ ...	142.2	291.9	519.6
Cork „ ...	191.2	184.9	230.9
Limerick „ ...	108.5	134.5	204.5

Observe that in the *City of Dublin* out of every 1,000 children born 171·2 die in their first year. This is the highest in Ireland. Look for a moment at *Belfast*. Here you will see a most astonishing fact—viz., that in every 1,000 total deaths no less than 519·8 (almost 520, and considerably over *one-half*) are children under 5 years of age. We are not quite so bad here in Dublin, although our rate is higher than it might be; but it is a reproach even to us that of our own total deaths more than one-third are children under five (306·2 per 1,000).

Thus far many investigators have gone before, and being accustomed to see such figures often quoted they may, perhaps, cause you no surprise.

I will, however, pass on to a more practical aspect of the subject, and ask you to come with me a step further, and let us investigate the causes of these deaths—viz., what classes of disease are most fatal to children in this country, and hence, perchance, we may at length approach the *fons et origo mali* (the sources of our high infantile mortality), a pursuit which is alike fraught with difficulty and interest.

In Table III. you will see set forth the *classes* of disease most fatal to children in Ireland under 1 year and under 5 years, for ten years ending 1896.

TABLE III.—*Classes of Disease most Fatal to Children in the Whole of Ireland for Ten Years ending December 31st, 1896.*

UNDER ONE YEAR. Causes of Death.		UNDER FIVE YEARS. Causes of Death.	
1 Local Diseases	... 46,444	1 Local Diseases	... 77,424
2 Ill-defined causes	... 30,716	2 Specific Febrile Zymotic Diseases	... 36,774
3 Specific Febrile Zymotic Diseases	... 15,400	3 Ill-defined causes	... 34,288
4 Constitutional Diseases	6,274	4 Constitutional Diseases	... 16,690
5 Developmental „	... 4,715	5 Developmental „	... 4,758
6 Violence	... 1,731	6 Violence	... 4,248
7 Parasitic Diseases	... 197	7 Parasitic Diseases	... 425
8 Dietetic „	... 52	8 Dietetic „	... 57

In this list I would draw your attention to the fact that of young children dying in Ireland an enormous number

appear to be so *indifferently certified* that they cannot be properly registered and classified. It is a great pity that so many deaths are ill-defined. Observe, also, that these imperfections are almost entirely confined to children under one year. What does this mean? I take it to signify, amongst other things, that the younger the child is the greater is the difficulty of the diagnosis of its disease, and hence the greater likelihood of its being inaccurately recorded. Again it must be borne in mind that in a great number of these ill-defined cases there has been no medical attendance at all, and the children have been allowed to die uncertified.

Pursuing this a step further, Table IV.\* will, perhaps, bring it out more forcibly. It shows you the various *systems affected* or *orders* of disease most fatal to young children. They are placed in the order of their relative importance.

This is a very valuable and interesting table. Observe the high place occupied by *nervous diseases*, especially in young infants. There were 21,998 cases of nervous diseases under one year, while in the *next four years combined* there were only 6,830. This is most remarkable. Observe, also, how *respiratory* diseases chiefly kill the older children.

Equally striking is the frequency of *diarrhæal* diseases under one year. *Veneræal* diseases are seen to act heavily on the younger children. Mark, also, the large number of *homicides* in infancy. There is an absence of *malarial* diseases.

The most useful Table of all is, however, the longest—Table V. It shows the actual registered diseases, and individual causes of death of all young children in Ireland for ten years, arranged in the order of relative morbidity.

\* Omitted from want of space.



**TABLE V.**—[Abridged.]—*Registered Diseases and Actual Causes of Death of all Children in the Whole of Ireland for Ten Years ending December 31st, 1896, in the order of relative morbidity.*

UNDER ONE YEAR.		UNDER FIVE YEARS	
Causes of Death.		Causes of Death.	
1 Debility, Atrophy, Inani- tion	29,186	1 Debility, Atrophy, Inani- tion	32,062
2 Convulsions	20,764	2 Convulsions	25,261
3 Bronchitis	14,017	3 Bronchitis	24,773
4 Diarrhoea and Dysentery	5,762	4 Whooping-cough	11,456
5 Whooping-cough	4,893	5 Diarrhoea and Dysentery	8,383
6 Premature Birth	3,827	6 Tabes Mesenterica	7,564
7 Tabes Mesenterica	3,512	7 Measles	7,557
8 Pneumonia	2,519	8 Pneumonia	5,868
9 Tubercular Meningitis	1,755	9 Croup	5,509
10 Measles	1,691	10 Tubercular Meningitis	5,069
11 Croup	1,589	11 Premature Birth	3,827
12 Dentition	1,201	12 Scarlet Fever	2,919
13 Ill-defined and not speci- fied Causes	1,176	13 Inflammation of Brain and Membranes	2,646
14 Diseases of Stomach	1,145	14 Dentition	2,399
15 Influenza	1,052	15 Forms of Tubercle or Scrofula other than Tabes, Phthisis, and Tubercular Meningitis	2,190
16 Inflammation of Brain and Membranes	923	16 Diseases of Stomach	2,000
17 Enteritis	796	17 Burns and Scalds	1,941
18 Ill-defined Diseases of Respiratory System	645	18 Influenza	1,909
19 Forms of Tubercle and Scrofula	637	19 Diphtheria	1,818
20 Suffocation	578	20 Ill-defined and not speci- fied Causes	1,754
21 Ill defined Accidents or Negligence	498	21 Enteritis	1,217
22 Simple Cholera	418	22 Phthisis	1,196
23 Homicide	406	23 Ill-defined Diseases of Respiratory System	1,194
24 Syphilis	399	24 Enteric Fever	751
25 Spina Bifida	368	25 Suffocation	621
26 Ileus and Intestinal Obstruction	357	26 Accidents and Negligence not stated	613
27 Scarlet Fever	356	27 Simple Cholera	607
28 Ill-defined Diseases of Liver	354	28 Laryngitis	578
29 Erysipelas	314	29 Diseases of the Liver other than Ascites, Gallstones, and Cirrhosis	495
30 Phthisis	231	30 Ill-defined Diseases of Brain and Cord	484
31 Sore Throat, Quinsy	215	31 Sore Throat and Quinsy	480
32 Ill-defined Diseases of Brain and Cord	202	32 Ileus and Obstruction	452
33 Atelectasis	197	33 Syphilis	452
34 Thrush	186	34 Homicide	430
35 Diphtheria	171	35 Erysipelas	407
36 Laryngitis	164		
37 Peritonitis	162		
38 Burns and Scalds	160		
39 Abscess	153		
&c., &c.		&c., &c.	

Now what disease heads the list? A very indefinite and unsatisfactory diagnosis. I think you will grant that *debility, atrophy, and inanition* is somewhat too general a term for a medical certificate. True it is that some of these are uncertified, but by no means a large proportion. This opens a large field for investigation. It represents, I think, a certain lack of that precise accuracy in our diagnosis of the fatal diseases of children, which, however difficult it may be, yet we all should aim at. Most of the cases catalogued in former tables as "ill-defined and not specified" are here found entered as "debility"—a title truly indistinct.

A like observation holds good with regard to *convulsions*. This, as you know, is not a true disease at all. It is merely a symptom—a most obscure one I grant you, but one which I think we should endeavour to fathom somewhat more deeply than, perhaps, we have been hitherto accustomed. Convulsions may be symptomatic of the most varied and diverse forms of disease, from the most trifling dyspeptic ailment on the one hand, to the most incurable gross structural disease on the other. To my mind, we might just as well register a death as due to *headache* as to say a child died of "convulsions." The diagnosis is difficult, but I believe we should try it, and not only so, but that we should educate our students to try it also. It is, at present, almost open to any outsider to say that the two chief causes of our infantile mortality in Ireland are diseases which are insufficiently recognised by our Profession.

There are many other points of interest in this Table—see No. 12 in the first list (No. 14 in the second). Now, *do children die from dentition?* I do not believe they do. We have all seen children die during the process of "teething," hundreds do, but if solely attributed to this cause I now believe the diagnosis to have been a more or less mistaken one. There are many accidents and accompaniments attending this period of "dentition" in children, just as there are at "puberty" and the "menopause," but as an actual cause of death it should not, I hold, be registered, as it has only a predisposing and remote connection with many of its contemporary troubles.

It is interesting to see where *suffocation* comes in our list; it ranks high in young children. Other diseases, to whose special position in infancy I would draw your attention, are:—*syphilis* (No. 24); *diphtheria* (No. 35); and *enteric fever* (No. 48). This latter I am inclined to believe is rather exaggerated in frequency. *Chorea* (No. 126), so very prevalent in later childhood, scarcely affects infants at all, and caused only one death in the whole of Ireland in ten years.

Turning now to the older children—viz., total under five years—observe *diphtheria* again (No. 19). I am of opinion this is very much under the mark. It is more common in these children than we are aware, but the uncertainty of the meaning of the word *croup* renders the returns as “*diphtheria*” exceedingly unreliable. I believe I am very nearly right—I will not say quite right, but very nearly so—when I say that *there is no such disease as croup*.

I have purposely inserted all the causes of death usually registered in this country, leaving blanks attached, to show how these affections have no part in the production of infantile mortality.

Finally, may I ask your attention to another important fact—viz., that this subject of “infantile mortality” seems to lie at the door of us *physicians* and not of the *surgeons*. With the high death-rate of children the surgeon appears to have little or nothing to do. I would that surgery might take with medicine its equal share of responsibility in this matter, but if you glance down these lists of deaths, how hard it is to find a purely surgical affection. They evidently die from “medical diseases.” Whether it is that surgery in young children is more brilliantly successful, and that medicine is comparatively a failure, or whether it can be that the practice of medicine amongst children is but little understood by any of us, or whether, again, that a *surgical* disease may be so supernaturally transformed as to die with a medical certificate are questions which I leave to your wiser judgment to determine! One thing, however, is certain, and *in this connection it should be borne in mind* for it is perfectly clear, *that hospitals for sick children should be mainly devoted to medical work.*

We must remember that in these matters we can deal only with the *fatal cases*. We have no public records of disease kept in the United Kingdom. We can, therefore, only guess at the comparative frequency of any illness.

I would ask you to kindly recollect that I have here attempted to give you only the smallest possible "bird's-eye" view of the whole subject as it appears to me, but a view which is, I think, essential before any deeper study can be undertaken.

I hope these few tables may be of some little use in pointing out the diseases from which young children are dying in Ireland at the present day, and which have to be fought against in any attempt to reduce our infantile mortality. They will, at least, lay a small but accurate foundation for further work on this subject. The chief of these diseases are ruled off at No. 11 on our list.

In conclusion only one word more—it is to return my cordial thanks to Dr. Grimshaw, our Registrar-General, for his kindness in lending me copies of his returns, some of which were out of print.

Also, I would refer you to a most able paper by Dr. Grimshaw on the social aspect of "Child Mortality in Dublin," which he traces to the four following causes:—

1st. Poverty.

2nd. Inferior House Accommodation of Artisans and Labourers.

3rd. Drunkenness.

4th. Carelessness.

Against these four causes then, and the first eleven diseases in my list, must be directed any and every crusade against the mortality of children in Ireland.

**ART. XXV.—A Case of Cerebral Abscess.\* By J. J. BURGESS, F.R.C.S.I., L.R.C.P.I.**

**THE** following case is deserving of interest from the fact that such an extensive lesion of the membranes and cerebral cortex presented so few physical signs with the continuous prevalence of the one symptom :—

**CASE.**—A. D., aged thirty-six, of intemperate habits, was admitted as destitute to the North Dublin Union, and sent to a hospital ward suffering from persistent headache.

I saw him about three months before his death—a year and nine months after his admission—and my interest was attracted by the constant presence of the pain, despite all treatment, during his time in hospital.

It was with some difficulty I could elicit a history. When asked a question he would, after an interval, answer in a few words, which effort appeared to increase his distress; then to escape further worry would turn over and feign sleep.

After several endeavours the history may be summarised as follows :—

From early manhood he had been an inveterate drunkard. When in this condition he was quarrelsome, and on at least two occasions he received injuries to his head, which had the effect of stunning him. He dates the beginning of the headache from a blow from a stick on the right side of his skull, causing a lacerated wound, from which accident he never recovered sufficiently to resume his occupation, was obliged to go to hospital, and, except for very brief intervals of relief, has been in the same condition ever since. I learned from the attendants that lately he had six convulsive seizures, the spasms being left-sided.

This is a doubtful point, since not having seen him in a fit myself I should be dubious of the ability of the people in charge of union wards to recognise unilateral spasms. He was able to get from his bed to the night chair, sometimes assisted, sometimes not, and beyond feeling weakness in his legs had no paralysis of either extremity. His face presented a dusky pallor; his skin was dry; body emaciated; no oedema; temperature subnormal—97.

Pulse of low tension, full, 72-78; heart-sounds indistinct, but free from murmur; impulse in 5th space very weak.

\* Read before the Section of Medicine, in the Royal Academy of Medicine in Ireland, on Friday, April 15, 1898.

He had cough, evidently pharyngeal, with stringy mucus.

Both lungs were normal, the breathing being slow and superficial.

The tongue was whitish, without marked fur; there had been no vomiting; bowels constipated; passed about 50 oz. urine daily, sp. g. 1.014, containing about 50 per cent. albumen, no sugar.

The surface of his body was hyperæsthetic all over.

The pupils were slightly dilated, but even, and barely acted to light.

*Knee-jerks.*—The leg reflexes acted slightly, but were soon lost on the left side with motion.

The headaches, he explained, seemed to start backwards and forwards from his right temple to his occiput, and then from over the entire head; he never got a perfect sleep—dozed for a short time, to be again awakened by the pain or any noise in the ward. Thus he spent most of his days and nights. He kept his eyelids closed, answered questions in a whining tone, after an interval, allowing a pause between each word. He presented no hemiopsia.

I regret I was not able to get an examination of his retinæ by a specialist; the gentleman who promised to come was unable at the time to attend.

However, taking the symptoms and physical signs at this time, there was motor weakness of the left leg. With the history of injury of the right side of head and alcoholism it was evident that I had something more than an uræmic headache to deal with.

The Jacksonian epilepsy, right side headache, and paralysis of left lower extremity pointed, in my opinion, to either an abscess or tumour implicating the convolutions at the uppermost part of the Rolandic sulcus. Accordingly I sent for the man's relatives, and told them I conscientiously believed that the one chance for the man's life was an operation. To this, unluckily, they would not agree, and to this I am indebted for the specimen now exhibited. The autopsy was by their wish confined to the cranium and its contents.

The external surface presented two depressions—one in the middle line, just above the supra-orbital ridges, a sharp depression as if a piece of bone had been chipped away. There was, however, no scar on the skin-covering, and

this, for aught I know, may be an uncommon but non-traumatic condition.

The second was just over the right parietal eminence, and was undoubtedly traumatic; the outer table was bent in over a space about the size of a shilling.

On lifting the skull the dura mater was not adherent, except in the vicinity of the second depression, where it was adherent and thickened over a space about three inches square. So hardened was it that at first I believed it to be a tumour underneath, until carefully removing it at the circumference a jet of greenish pus shot out.

Over the whole vertex the dura mater exhibits great thickening, and is completely adherent to the cerebral cortex for about one and a half inches to the left and for three inches to the right of the middle line, on which side the thickening is much more marked.

Transverse sections through the thickened membranes and subjacent cortex revealed a cavity containing, in the recent state, a bright greenish pus. This collection did not extend anteriorly beyond the posterior part of the ascending parietal convolution—*i.e.*, encroached slightly, if at all, on the Rolandic area, being about an inch distant from the middle line.

As the site of this fluid was traced backwards—at first situated immediately beneath the membranes—it seemed to burrow somewhat into the brain substance, and in the occipital lobe, towards its termination; was roofed in by a thin layer of cerebral cortex. The cavity did not exceed an inch in diameter in any part of its course; becoming much narrower posteriorly.

The layers of membrane enclosing the superior longitudinal sinus shared in the general thickening, and, though patent anteriorly, from the point where the abscess seemed to originate to its termination in the lateral sinus, its lumen becomes completely obliterated, exhibiting a condition of complete thrombosis.

ART. XXVI.—*Stab Wounds of the Left Shoulder, necessitating Ligature of the Left Subclavian Artery on the 27th Day; Recovery.* By R. BOLTON M'CAUSLAND, Sen. Mod., B.A. T.C.D., M.D., F.R.C.S.I.; Surgeon to Steevens' Hospital.

THE operation of ligature of the second part of the subclavian artery for aneurysm has lately formed the subject of an interesting paper in the Royal Academy of Medicine in Ireland by Mr. Croly. In spite of this fact, I hope I may be pardoned for shortly recording the notes of the case, which is the subject of my communication, as the operation was performed for recent stab wounds of a large vessel (probably axillary), with alarming secondary repeated hæmorrhages, after an attempt was first made to find the bleeding point.

Since my connection with Steevens' Hospital I have seen only one other case of secondary hæmorrhage, and there has been no case requiring ligature of the subclavian in any stage, nor can I find any record of when, or by whom, it was last tied in that institution.

The notes are shortly as follows:—

CASE.—J. N., aged thirty-four, a shoemaker, was stabbed by his own father, on February 16th, 1898, with a shoemaker's knife, in four places—one in the region of the deltoid insertion, one above this, a third cutting the posterior fold of the axilla, and the fourth above the collar bone on the trapezius muscle. He was brought to hospital, having lost much blood and collapsed, but only bleeding slightly then. Owing to a mistake of the house surgeon I was not sent for, but my pupil, Mr. Quin, dressed the wounds carefully, putting in eighteen stitches, and bandaging the arm to the side.

When I saw the patient next day he was comfortable, and there was no bleeding, but he was blanched, with a quick, thready pulse. The wounds, being free from pain, were not dressed for five days. I then saw them for the first time; two were looking well, the two about the shoulder red, and somewhat swollen. I removed the stitches from all. The two latter wounds gaped, one especially, no discharge or blood from any of them, and I hoped for a speedy convalescence, as the man was better, and temperature and pulse good, appetite improving. On the seventh, eighth, ninth and tenth



days the dressings were blood-stained, necessitating changing. I had ice applied to the shoulder, ergot and gallic acid internally, and a special nurse day and night, and on consultation my colleague, Mr. Hamilton, agreed with me that the one wound should be plugged carefully. This was done with iodoform gauze and hazeline; also, strict quiet, of course, was enjoined. The bleeding ceased for some days, and the man improved. Then the bleeding appeared again on the eighteenth, nineteenth and twenty-first days, and finally culminated in a profuse hæmorrhage on Sunday night, March 18th, the twenty-fifth day.

Dressings, nightdress, and bed-clothes were all saturated, but the hæmorrhage had ceased when the resident saw him. I was sent for, and I had the wound carefully dressed, a morphin hypodermic  $\frac{1}{2}$  grain, ergot gr., and strychnin  $\frac{1}{20}$  grain, administered, saline salt solution by the rectum, lots of ice applied, and quiet. Next morning I had a consultation, but decided to wait a day, as the man was in a very weak state. On Tuesday morning my colleagues, Mr. Hamilton and Mr. Swan, saw him with me. He was better, and had rallied, but it was evident something more energetic should be done.

Three operations seemed to suggest themselves to me:—*a.* Amputation at the shoulder-joint; *b.* Ligature of the subclavian; *c.* To enlarge the wound and look for the bleeding vessel.

Ligature of the axillary artery, in the first stages, is not an operation that recommends itself to me; and the third stage was out of the question, as the arm was very fixed to the side, and there was an unhealthy wound, not healed, in the axilla itself to complicate matters. Ligature of the subclavian seemed to me most preferable; but as there was a large swelling over the scapular region, evidently breaking down blood-clot, my colleagues advised the third proceeding first, and I now think that they were right.

Under an anæsthetic I freely enlarged the opening, giving exit to a large quantity of blood-clot; an unhealthy opening came into view, with a small soft clot leading down towards the head of the humerus. The finger could sweep round this clot; I removed some of it, and the part that remained pulsated more and more the deeper one got in the dissection. I still kept enlarging the wound cautiously, and could feel the neck of the scapula to the inner side, but no bone outside only what seemed to be muscular bands.

I considered the wounded artery was the subscapular, or more likely the axillary itself—*a.* From the direction of the original stab; *b.* From the sudden, rapid, and large amount of the hæmorrhages.

I feared to enlarge the wound more, it was so deep and unhealthy-looking, so I asked my colleagues to examine it. As Mr. Hamilton was feeling the clot it became dislodged, and on withdrawing his finger a copious gush of blood spurted out. I immediately thrust my fingers into the wound, which effectually plugged it. Mr. Swan made for me a long compress soaked in turpentine, which I cautiously pressed in to replace my fingers, and packed some more of the same compresses in on top, and put three deep, strong, silk-worm gut sutures in to keep all in place.

The man was now turned on his back, and the subclavian region was rapidly washed and disinfected, as were also our hands. An incision was made along the clavicle from outer edge of sterno-mastoid to anterior edge of the trapezius; this was enlarged a little later, and the edge of the sterno-mastoid cut; nothing of importance appeared, and the operation was rapidly proceeded with. Two small vessels were for a time clipped, a large artery (*transversalis colli*) and the omohyoid were seen and drawn upwards. The lower cord of the plexus was seen and at once recognised from its direction, the tubercle on the first rib was badly marked, the subclavian vein was in the lower part of the wound alternately filling and emptying, and the artery at times pulsated visibly, then again not at all.

When the scalene edge was fully made out and the vessel cleaned I passed a fully-curved aneurysm needle from above backwards, downwards, inwards, and forwards quite easily round the artery; this was threaded with three single silk ligatures, No. 3, that had been boiling, and these drawn back again.

These were altogether drawn tight in a single knot, and fastened in a single reef knot, and the ends cut short. Pulsation was now visible up to the knot, but none beyond it. The ligature was drawn tight, but no sense of the coats having given way was experienced.

The wound was irrigated with carbolic lotion, 1 in 20, and then hot sterilised water, dusted with boric powder, the edges accurately adjusted with silkworm gut and horse-hair, sterilised compresses and cellulose applied, and the arm wrapped up in wadding and flannel bandages. The left arm and forearm had been swollen and oedematous for some days past, and the pulse had been with difficulty felt; none, however, was felt after the ligature was applied.

The operations had taken two and a quarter hours, and the man had borne them well, but I gave him a hypodermic of morphin,  $\frac{1}{4}$  gr., and strychnin,  $\frac{1}{20}$ ; these rallied him well. To shorten the notes, I may say the man went on well until

Thursday morning, about 3 a.m., when he became delirious; morphin and bromides freely given, and ice to the head, did not seem to have any effect. His violence, tossing about and shouting, was extreme, and his strength very great—surprising after all he had gone through, and causing me to fear giving-way of the ligature, hæmorrhage, opening up of the two wounds, and other numerous complications.

Some surgeons, who were at the hospital that day to see another operation, both heard his shouts and saw him with me. Some thought it was alcoholic delirium, but I did not think so. Mr. Bennett, our consulting surgeon, advised opium enemata, two of which he got; with difficulty I removed the plugs from the posterior wound, irrigated it, and dressed it lightly with iodoform gauze, no bleeding from it at any time, and it has been dressed once daily ever since; it granulated rapidly, and was finally healed on May 5th. The delirium passed away in nine and a half hours, as rapidly as it came on, and he has had no return of it since.

The subclavian wound was dressed first on the 8th day—it was dry and completely healed, except where one stitch had slipped, and there was a dry scab one-third inch long on that spot; all the stitches were removed, and it was only dressed twice since then, though a firm pad was kept constantly on it. The patient's temperature fell to normal the second day after operation, and has remained so, with the exception of a few trivial rises due to confined bowels—always a trouble with him. He had one slight rigor fifth day after operation, the cause of which I could not make out; it was followed by no new signs and symptoms and no increase of old ones.

Pain, with exacerbations at times in the deltoid region, forearm and hand, which he had complained of since he was stabbed, was his only troublesome symptom after operation; this was treated by morphin hypodermics when excessive, and by gentle rubbing and massage later on when permissible.

In the second and third weeks after operation, pains in the hand and shoulder were most severe, due, I thought, to vascular alterations.

After operation the œdema in the limb rapidly subsided, but no pulsation was felt in any part of it until the thirty-fourth day after operation, when the radial only was felt feebly pulsating. His appetite increased gradually; he asked leave to smoke on the fourteenth day (after opera-

tion), and was allowed up out of bed on the twenty-fifth day. With massage and more freedom of movement allowed, the limb is daily improving, and the pains are not so severe as they were.

My best thanks are due to my colleagues for their experienced advice and assistance, and also my thanks are due to Mr. Quin, my dresser, and those nurses whose unremitting care and attention tended towards the recovery of this most anxious case.

I have had the honour of showing the patient to members of the Surgical Section of the Royal Academy of Medicine in Ireland.

#### SCARLET FEVER.

SEIBERT (*Arch. of Ped.*, September, 1895), has found that inunctions of a 5 per cent. ointment of ichthyol have been followed by a most marked effect upon the local condition of the skin, producing decline of fever and improving the general condition. The swollen, red skin shrinks and turns pale brown; the temperature falls  $8^{\circ}$  to  $4^{\circ}$  within two hours; and the nervous, itching, peevish child becomes quiet and usually goes to sleep.

#### LAVAGE OF THE ORGANISM IN ACUTE COCAÏN POISONING.

FROM experimental researches conducted by Dr. C. Bosza, of Naples, he arrives at the following conclusions:—“(1.) While the minimum fatal dose of cocaïn muriate administered hypodermically is 0.025 gr. per kgr., one can inject, of the same drug, without fatal result:—(a) Gr. 0.08, if we follow the said injection with hypodermoclysis; (b) and 0.035 gr. per kgr., if we follow the said injection with lavage of the organism by the injection of the physiological solution of sodium chloride. (2.) While the minimum fatal dose of cocaïn muriate administered fasting by the alimentary canal is  $3\frac{1}{2}$  centigr. per kgr., one can, with lavage of the organism, administer as much as  $5\frac{1}{2}$  centigr. per kgr. without fatal result. The maximum limit of tolerability could be much greater if the toxic substance were given in broken doses, as Sanquirico did, rather than in a single dose; but I refrained from experiments by that method, because poisoning by cocaïn, whether accidental or with criminal or suicidal intent, rarely takes place in broken doses.”—Translated for the *Canadian Practitioner*, from *Giornale Internaz. delle Scienze Medicine*, February, 1898, by Dr. Harley Smith.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Clinical Lectures on Diseases of the Heart and Aorta.* By GEORGE WILLIAM BALFOUR, M.D. St. And., LL.D. Edin. and St. And., F.R.C.P. Edin., F.R.S. Edin.; Consulting Physician to the Royal Infirmary, Edinburgh, &c., &c., &c. Third Edition. London: Adam and Charles Black. 1898. 8vo. Pp. 479.

THE first edition of these instructive lectures appeared in 1876, the second edition in 1882, and now the third edition is published in 1898. These lectures are clinical in structure and matter. They are seventeen in number, and embody the author's personal experience of the topics with which they deal. Included in the text are notes of a series of forty-six cases quoted in illustration of the author's teaching in relation to various valvular and cardiac lesions.

We notice, with pleasure, that full justice is done to Irish physicians in the text. The researches of Corrigan, Stokes, Thomas Beatty, Tufnell, Hayden, Bellingham, and others, are quoted—generally with approval, always with respect.

In our reviews of the first and second editions\* we pointed out the character and scope of Dr. Balfour's book. It is essentially a clinical work rather than a systematic treatise. Hence the arrangement of the subjects discussed is not schematic, and there is no attempt at classification.

In Lecture XIV., on the Therapeutics of Cardiac Disease, the principal debatable point is the author's unqualified depreciation of the value of strophanthus as a remedy in heart affections. "Though strophanthus belongs to the same group as digitalis," writes Dr. Balfour, "it acts very dissimilarly. "Strophanthus acts *three thousand times more powerfully* on the heart than digitalis, but it acts *one hundred times less powerfully* than digitalis upon the muscles of the

\* See Vol. LXII., No. 56, Third Series; August, 1876, page 119; and Vol. LXXIV., No. 128, Third Series; August, 1882, page 121.

arterioles." These are, of course, Professor Thomas Fraser's statements.\* "There is thus," adds Dr. Balfour, "no similarity whatever between the action of the two drugs." "There is no tonic action, no improvement of the cardiac energy, and the powerfully stimulating action of strophanthus on the heart itself must tend to exhaust an already feeble myocardium. Moreover, the action of strophanthus on the heart is twofold; in small doses it may arrest the heart in diastole, and in large doses it may force it into a fatal systole. Like all its congeners of the *Apocynaceæ*, strophanthus is a cardiac poison, and not a cardiac tonic. It forces the heart into increased energy of movement without providing for any corresponding improvement in its metabolism, hence the heart must draw upon its reserve, and the patient is only saved from dire disaster by the benefit he derives from rest, warmth, and nutritious food, that is by the improvement in his environment generally." "Strophanthus is thus uncertain in its dose, and may be dangerous in its action, and though not cumulative it may be injurious or even fatal without warning."

This is a rather sweeping denunciation of a drug which many physicians daily prescribe with much confidence, and apparently with benefit in cases of heart disease. It is, no doubt, true that strophanthus is not suitable in all cases, and that common sense must be exercised in prescribing. It is equally true that in some cases of cardiac failure and of uncompensated valvular disease, strophanthus acts like a charm, restoring compensation, but, above all, relieving the patient.

In an admirable address on the Therapeutics of Heart Disease delivered in the Section of Medicine at the meeting of the British Medical Association at Carlisle, in 1896, Sir T. Grainger Stewart compared the two drugs, digitalis and strophanthus. "If the case admits of delay," said he, "use digitalis; if you wish to produce an immediate effect, give strophanthus." Over and over again we have verified the correctness of this opinion. Nor should we be too timid as regards the dose of the drug— $7\frac{1}{2}$  to 10 or even

\* "*Strophanthus Hispidus*." *Trans. of the Royal Society of Edinburgh*. Vol. XXXVI., Pt. 2, page 403.

15 minims of the official tincture may be given thrice daily, or, in some cases, every fourth hour; but only for 48 hours or so at a time should these free doses be exhibited.

There is little in Dr. Balfour's prescriptions to criticise adversely. At page 58, however, he combines 10 minims of tincture of digitalis with 5 minims of liquor arsenicalis and a like quantity of the tincture of the perchloride of iron. Surely the arsenical preparation should be the liquor arsenici hydrochloricus.

The author's style is clear and fluent. Scarcely any inelegancies grate upon the ear—"specialities" (for "specialties") at page 63 is an example which but serves as a counterfoil to the usual high standard of Dr. Balfour's literary skill. At page 326 there is the strange misprint *corpora aurantii*. In his third edition the author has enhanced his reputation and conferred a boon upon his professional brethren.

*Annual and Analytical Cyclopædia of Practical Medicine.*

By CHARLES E. DE M. SAJOUS, M.D., and One Hundred Associate Editors, assisted by Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-Lithographs, Engravings, and Maps. Volume I. Philadelphia, New York, and Chicago: The F. A. Davis Company Publishers. 1898. 8vo. Pp. 601.

UNDER the above heading the well-known "Annual of the Universal Medical Sciences" appears in a new and enlarged form.

In a recent review of "The Monthly Cyclopædia of Practical Medicine and Universal Medical Journal"\* we sufficiently pointed out the salient features of Dr. Sajous's new publication, the first volume of which has been presented to us after a very handsome fashion. It is, therefore, merely necessary to state that the object of Sajous's "Annual and Analytical Cyclopædia of Practical Medicine" is to help the professional labours of the practitioner, the teacher, and the writer. The practitioner will find in the pages of the work innumerable suggestions culled from

\* See page 330.

the literature of the past decade. The teacher will be able to quote from its columns examples and cases, calculated to illustrate his systematic or clinical lectures. The writer may gather the fullest information on any special topic, for the literature of every civilised country is represented in the cyclopædia. If he wishes to review recent medical literature he will find it under the heading "Literature of '96 and '97." Should the reader's time be limited, he need study only the text in large type. If he has time to spare he may with benefit read the text in small type.

The present volume carries us from "Abdomen, Injuries of the," to "Bright's Disease." No pains have been spared by the Editorial staff and by the publishers to make the work worthy of its readers. Dr. Sajous has our hearty congratulations.

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*Text-Book of Nervous Diseases, being a Compendium for the use of Students and Practitioners of Medicine.* By CHARLES L. DANA, M.A., M.D.; Professor of Nervous and Mental Diseases in the Bellevue Hospital Medical College; Visiting Physician to Bellevue Hospital; Neurologist to the Montifore Home, &c. Fourth Edition, revised and enlarged, with 246 Illustrations. London: J. & A. Churchill. 1898. Pp. 623.

WE are much pleased with Dr. Dana's work. His object in writing the book has been to present the science of neurology in a concise, yet as far as possible complete, form, and we must congratulate him on his success. The book cannot quite be compared with the works of Gowers, Ross, and others who have written large treatises on the subject; on the other hand, it contains more than do the neurological sections of our text-books on medicine and the smaller introductory text-books of nervous diseases. Especially do we find Dr. Dana devoting much space to the anatomy of the nervous system, both naked eye and microscopic, and these sections are illustrated with many figures and diagrams.

Dr. Dana's work then starts with the anatomy of the nervous system. He describes the modern views as to the



nature and connections of the neuron, and introduces a good many figures and one coloured plate to illustrate the cells as found in the nervous system. Most of the figures are very good. We could, however, wish that some were more clear—*e.g.*, those representing the distribution of the sensory nerves of the skin and those showing the motor points for the application of electricity.

The various nervous diseases are well, though rather briefly, described. We miss that frequent reference to individual cases which forms such a valuable part of the larger works on the subject, but, on the other hand, the readers of Dr. Dana's work will find the important points in each disease clearly brought out, and expressed tersely.

The illustrations, both clinical, anatomical, and pathological, form a valuable part of the work, many of the woodcuts representing striking symptoms—*e.g.*, the gait in paralysis agitans—are very instructive.

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*Selected Essays and Monographs.* Translations and Reprints from various sources. London: The New Sydenham Society. 1897. Pp. 436.

THIS volume of the New Sydenham Society's publications contains essays on very various subjects. The first and longest in the book is on syringomyelia, by Isaac Bruhl, of Paris. It gives a very complete account of the disease, illustrated by notes of some typical cases, and by a coloured plate showing sections of several cords in which central gliomata are breaking down into cavities. In the text a good deal of attention is rightly paid to the differential diagnosis.

There are three essays on syphilis in its relations to the nervous system; one by Dr. H. M. Thomas (Johns Hopkins Hospital) on an unusual case of cerebro-spinal syphilis; one by Professor Fournier on syphilis and general paralysis; and one by the same author on para-syphilitic epilepsy.

A large part of the book is taken up with essays on various kinds of skin diseases. There are articles on pemphigus vegetans by Professor Köbner and by Professor Newmann; on framboesia (yaws), by Drs. Maxwell, Nicholls, Breda, and Charlouis. These on yaws contain a good many coloured

illustrations of the disease. Taken together, these essays represent the experience of medical men in the West Indies, British Guiana, Fiji, Java, and Brazil, and form a valuable collection of literature relating to this subject.

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*Researches on Tuberculosis.* The Weber-Parkes Prize Essay, 1897. By ARTHUR RANSOME, M.D., F.R.S.; Consulting Physician to the Manchester Hospital for Consumption and Diseases of the Throat, &c. London: Smith, Elder & Co. 1898. Pp. 84.

THE most interesting and valuable portion of this essay is that which refers to the author's original investigations. He first shows that, according to the Registrar-General's statistics, the mortality from phthisis is steadily diminishing, having fallen from 38 per 10,000 in 1838 to 14 per 10,000 in 1894. A remarkable feature is that the chart containing these returns shows an almost perfectly even and regular descent in the phthisis mortality. Another curious fact is that tubercular diseases, other than those of the lung, do not appear to be decreasing—a fact possibly to be explained, although Dr. Ransome does not hint at any such explanation, by our knowledge of the tubercular nature of many diseases of previously unknown origin.

He goes on to show that in his own neighbourhood tuberculosis is far more common among a portion of the population who live on a clay soil than among the rest, whose dwellings are built on sandy soil; the general conditions and mode of life are similar in the two groups.

A series of interesting and valuable experiments show the effects of air and light on tubercle bacilli. Dr. Ransome finds that free currents of air cause bacilli to perish rapidly in daylight and slowly in the dark, whereas in the absence of currents of air they retain their vitality for long periods.

In another series he shows that the organic vapours given off in expired air promote the growth of the bacillus, while he found the best household disinfectant to be a one per cent. solution of chloride of lime.

Dr. Ransome's recommendations for the prevention of tuberculosis are excellent, but we fear at present, at least,

unattainable. Thus, as well as perfectly sanitary houses for everybody, he advises that every consumptive person who is without proper lodging and accommodation, or who cannot or will not take the proper measures for disinfecting and destroying the infective material, should be placed in special hospitals or asylums.

In the last chapter he gives the results of his experience with various drugs. He finds that iodoform in pill, two grains three times a day, seemed generally useful, as also was creasote, especially when the dose was increased to thirty minims a day.

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*Transactions of the Clinical Society of London.* Volume the Thirteenth. London: Longmans, Green & Co. 1897. Pp. 262.

THIS volume of the Clinical Society's Transactions shows evidence of work among its members of which any society might be proud. The "clinical" character of all the papers is very marked; they are all records of cases, many of which are of great interest.

Of them all, perhaps that which has especially interested us is Mr. Parkin's case of the successful removal of a cerebellar tumour from a child aged four years. At the operation a large flap, made by an incision from mastoid to mastoid, was thrown upwards, a considerable area of bone was removed, and the cerebellum was exposed. Part of it was very soft and yellowish gray in colour, and this was removed till nothing but healthy cerebellar tissue could be seen. The child recovered from the operation, and gradually lost the symptoms she had previously complained of—slow speech, inability to walk, optic neuritis, increased reflexes. The tumour seemed to be gliomatous. The child was in good health at the end of two years.

Mr. Arbuthnot Lane also records the removal of a tumour—endotheliomatous in nature—from the ascending frontal and neighbouring convolutions. Dr. Newman records some interesting cases of increased vascular tension in the kidney, causing pain and albuminuria, which were relieved by surgical means. Mr. Robinson relates a very interesting case,

in which two quarts of pus were removed from the pericardial sac with perfectly successful result. Dr. Lancaster relates a curious case of fatal gastric hæmorrhage, the blood coming from a small perforation in a varicose gastric vein.

We are glad to see that the Society is in a flourishing state.

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*The South African Climate, including Climatology and Balneology.* By W. C. SCHOLTZ, M.D. Edin., of Cape Town; Member of the Colonial Medical Council. With Eleven Illustrations. London: Cassell & Co. 1897. Pp. 200.

SOUTH AFRICA is becoming increasingly important as a health resort. A few years ago no physician thought of sending patients there. In many books on health resorts South Africa is wholly omitted; even in Dr. Burney Yeo's work published in 1890 only one page is devoted to it. Now many invalids resort thither, and without doubt their numbers will much increase in the future. Hence there was a need for a reliable and good work treating of the various places and climates in South Africa. For we are inclined to forget the immense size of the country; and while we advise a patient as to which of two towns twenty miles apart on the south coast of England would probably suit him best, we too often merely advise "South Africa," and leave to chance the choice of locality, with its questions of altitude and climate.

Dr. Scholtz's book will help to bring before his readers the size and diversity of the country. It contains eight chapters, each written on some special locality by medical men resident therein. Writing as they do from extended personal experience, their accounts are very valuable—in fact, they form much the most valuable portion of the work. They, of course, vary in quality, some being concise and to the point, while others are rather long-winded and padded out with quotations. But, taken all round, they fill a distinct want and supply a mass of information which it would be difficult to obtain elsewhere.

As regards Dr. Scholtz's own contributions, we regret we cannot speak of them in quite such laudatory terms. While his writing contains much that is excellent, its value is

lessened by the diffuseness of his style. All that he says might with advantage be compressed into very much less space; he has also made a great mistake in not giving practical details, most valuable to those who may intend to go to South Africa. There is very little information as to the means of travel and mode of access to the different localities mentioned in the book, and many more details might have been given with regard to the mode of living and expenses at South African health resorts; a map, too, is badly needed to show the places mentioned in the book.

There are eleven illustrations, said to be of typical bits of South African scenery. It strikes us as strange that eight out of these represent lake or river scenery. We had not thought of South Africa as typically a land of lakes and rivers, and the idea forces itself upon us that these illustrations are intentionally introduced, not to give an idea of the average landscape, but to prove that there are some very pretty bits of river scenery in the country.

In almost every article in the book we notice earnest and strong statements as to the folly—if we should not use the word crime—of sending out unsuitable cases, especially of consumption. Cases that suffer from much fever, rapidly advancing cases, cases in which the disease is very extensive, only die, and that without the comforts they would have had at home. It must be remembered too that South Africa is an expensive country to live in, and that invalids cannot expect to be able to support themselves by work, and hence it follows that no one should go to South Africa unless he has considerably more than enough money to keep him in comfort at home.

Taken all round, the book is a valuable and interesting one, and we commend it to all interested in what is certainly one of the finest climates for many forms of delicacy.

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*The Royal University of Ireland. The Calendar for the year 1898. Dublin: Alex. Thom & Co. (Limited). 1898. 8vo. Pp. 465.*

THE Calendar, as usual, contains full information relative to the medical curriculum and examinations. The changes

in the courses and regulations are set out at pages 210 and 211. They are not many. In and after 1899, the hospital attendance required for the second year of medical study will be *Attendance during a Winter Session of Six Months*; but the total hospital attendance will remain as heretofore, *i.e.*, attendance during thirty-three months.

In October, 1899, there will be offered for competition among the graduates in medicine of the University, one Medical Studentship, tenable for two consecutive years, of the annual value of £200. Candidates at this examination must answer in the following subjects:—Physiology and Physiological Chemistry. A practical examination will be held in physiological chemistry and in experimental physiology, and "great importance will be attached to this portion of the examination."

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*The Practice of Massage ; its Physiological Effects and Therapeutic Uses.* By A. SYMONS ECCLES, M.B., M.R.C.S. London: Baillière, Tindall & Cox. Second Edition. 1897. Crown 8vo. Pp. 374.

THE author of this work on the practice of massage is to be congratulated on the success that he has attained; the demand for a second edition so soon after the appearance of the first is in itself a sufficient proof that the work has been appreciated by those who are interested in the subject.

The definitions of the different terms used in massage, and the various methods of manipulation, are very clearly and carefully explained in the opening chapter, and this is followed by a chapter on the physiological action of massage, which shows that the author has studied the whole subject from a scientific standpoint.

A detailed account of the various affections in which massage has been found of use occupies the remainder and greater portion of the work, and we are thoroughly in accord with all that the author says about the beneficial results that have followed from this treatment of injuries to bones, joints, and muscles, and we heartily join with him in expressing our regret that massage is not more often employed in the early treatment of fractures.

With regard to the value of massage in affections of the skin we are not so sanguine, and that "herpes zoster has been aborted in a large number of cases of sciatica" is certainly a fact that we were not aware of before.

In dealing with diseases of the gastro-intestinal tract the author describes a large number of cases where benefit has followed the employment of massage, and we are sure that carefully executed manipulations are often of the greatest use, especially in cases of chronic constipation, provided that no mechanical obstruction exists.

The treatment of chlorosis by massage we are not familiar with, and we are somewhat sceptical as to its great utility. We believe the great benefit that is described as following this treatment to be largely due to the absolute rest that is enjoined at the same time.

We are glad to note that the author has had such successful results in the treatment of occupation neuroses, as we must confess that in our hands such favourable results have not been procured. Many other affections, too numerous to mention, are also dealt with, and in all the author gives illustrative cases of the benefits that have followed from properly executed massage. Though we have not in all points been in perfect agreement with the writer, we consider the work to be one of very great interest and value, and feel sure it will take a high rank amongst the works already published on this important subject.

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*A Handbook of Therapeutics.* By SYDNEY RINGER, M.D., F.R.S., Holme Professor of Clinical Medicine, University College, Physician to University College Hospital; and HARRINGTON SAINSBURY, M.D., F.R.C.P., Physician to the Royal Free Hospital and City of London Hospital for Diseases of the Chest. London: H. K. Lewis. Thirteenth Edition. 1897. 8vo. Pp. 746.

To review at any length a work which has already passed through 12 editions seems to us unnecessary. The present volume follows the same lines as its predecessors, but the addition of new material has increased its size by nearly 100 pages.

In the early chapters we find a short account of the Nauheim-Schott treatment of cardiac failure. The methods adopted in this form of treatment are very fully described, but we think the authors might have given a more detailed account of the cases in which it has been found of use. To merely state that "the treatment is adapted for the more vigorous cases of heart failure, but, provided that we temper it according to the condition of the patients, it may find its place, *more or less*, in most cases," seems to us sufficiently vague.

The great bulk of the work, as heretofore, is devoted to a detailed account of the therapeutic value of the most important drugs in use at the present time, and here, as elsewhere through the book, we find on examination that no trouble has been spared in thoroughly revising the work and bringing it up to date. New drugs have been added to the already long list, and each of these has received a due proportion of notice.

An excellent article on serum therapeutics is, perhaps, the most important addition to the work. The authors divide the subject into two categories:—

1. "The use of serums, or extracts, obtained from organs or tissues derived from the bodies of healthy animals in the treatment of diseases in which the corresponding organs or tissues are held to be at fault."

2. "The use of serums derived from the bodies of living animals which had been subjected to the influence of various pathologic micro-organisms or of the products of their activity. Such serums are employed in the treatment of the diseases which these same micro-organisms generate when they gain access to the human body."

Each of these divisions is discussed in detail, and the reader will find all the latest information on this new and what promises to be most successful form of treatment.

Some useful receipts for invalid cookery, and a short chapter on the digestive ferments, are added to the article on invalid dietary, and the work concludes, as before, with a carefully prepared index of diseases.

We congratulate the authors on the successful result of their labours. The present volume maintains in every



respect the high standard of excellence that gained for its predecessors such a measure of popularity, and places it among standard works on therapeutics.

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*Illustrierte Rundschau der medicinisch-chirurgischen Technik.*  
Internationale Vierteljahrsschrift. Herausgegeben von  
DR. GUSTAV BECK. Bern: K. J. Wyss.

THIS new journal belongs to the class of Centralblätter, and is intended to keep its readers informed as to the novelties and improvements in the methods of treating diseases outside the domain of pharmacology. The first number, which we have received, is divided into five sections. Each begins with a list of papers, and this is followed by abstracts of papers, or groups of papers, on particular subjects. The text is very fully illustrated.

The first section has articles by Ladame, giving a summary of recent work on the kinesitherapeutics of locomotor ataxy and diseases of the nervous system, and on intermittent currents of great frequency.

In the second section there is a review of Kaufmann's *Handbuch der Unfallverletzungen* by Lardy, together with abstracts of papers on sterilisation of catgut and other surgical subjects.

The third section, on external regional surgery, contains, among others, an original article by Lambotte on the surgical treatment of Potts' disease.

The fourth section deals with pelvic surgery; and the fifth with diseases of the digestive and respiratory organs, and the organs of special sense.

The editor, who, from his long connection with the *Illustrierte Monatsschrift der ärztlichen Polytechnik*, is well fitted for his task, has obtained the assistance of a large staff of collaborators. The number before us consists of 92 pages, and contains 65 drawings of apparatus described in the different articles. The undertaking is likely to be useful, and we wish it every success. The journal will be published quarterly. The subscription is 10 marks annually.

## PART III.

### MEDICAL MISCELLANY.

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#### *Reports, Transactions, and Scientific Intelligence.*

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*On the New Tuberculin Preparation.* By GEHEIMRATH PROF. DR. ROBERT KOCH. Translated from the *Deut. med. Woch.*, No. 14, 1897, by H. E. LITTLEDALE, M.B.; House Surgeon, Sir P. Dun's Hospital.\*

(Continued from p. 440.)

AFTER separation into the two fluids, TO and TR, one finds that TR contains the violet cloudy appearances, and the blue-coloured masses in TO. A further difference exists in the fact that by adding 50 per cent. of glycerine to TO, it suffers no change, while a white, flaky precipitate is produced with glycerine in TR, leaving behind a perfectly clear watery fluid. On another occasion I shall report on further interesting chemical differences.

This behaviour towards glycerine showed that TR contained mainly such constituents of tubercle bacilli as are insoluble in glycerine, and so remain behind when one makes a glycerine extract, while TO contains the parts soluble in glycerine.

Accepting these facts, the trial of the two preparations on animals and man is quite in accord with them. TO in its qualities is very closely allied to ordinary tuberculin. It corresponds in its action almost exactly to the preparation TA, which I have described above, with the exception that one need fear no production of abscesses with TO. But it has also only very slight immunising qualities. TR, on the contrary, has most certainly an immunising action; it produces reactions also in tuberculous subjects if too large doses are employed, but its action is quite independent of these reactions. While it is a matter of necessity that reactions be elicited by using ordinary tuberculin as well as TA and TO to obtain curative effects, I try in using TR to avoid reaction as far as possible, and endeavour, by gradually increasing the dose, as quickly as possible, but with all possible consideration, only to make the patient

\* Read before the Dublin University Biological Association in December, 1897.

insusceptible to larger doses of the material. I mean, I immunise him against TR, and what I regard as acceptable, by doing so I immunise him against tubercle bacilli themselves.

That TR comprises all the immunising factors present in cultures of tubercle bacilli is proved from the fact that a man who has been immunised against TR does not react any longer against large doses of ordinary tuberculin or of TO, even when reactions have been almost completely avoided during the process of immunising: he is in fact protected against all the constituents of the tubercle bacillus. As this action of TR seemed to me a very important one, I have proved it in a large number of cases to avoid any doubt being cast upon the correctness of the observations.

In order for TR to act up to its fullest extent, there are, I admit, some indispensable conditions to be fulfilled during its production.

To begin with, every culture of tubercle bacilli is not suitable for the production of an effective TR. I have made experiments of late, in company with Dr. Vagedas, which have convinced me that tubercle bacilli are not at all equally virulent, as has been hitherto supposed. These experiments are to be published later on. Pretty considerable diminution in virulence occurs even in cultures that have been freshly grown. Cultures which have been transplanted in the laboratory over a long period of time have usually lost their virulence very much. In preparing TR only highly virulent cultures should be used. Ones that are slightly virulent produce also only slightly effective or quite ineffective preparations. The cultures must not be too old; they must be worked up in as young a state as possible. The drying must only be undertaken in a vacuum exsiccator. Other manipulations easily bring about such changes that the substance becomes less soluble and consequently less effective. All introduction of chemical substances, be it ever so slight, is to be absolutely avoided, as TR seems to be very sensitive towards them. For the same reason the completed preparation, and also the cultures that are going to be worked up, must be protected from light. The cultures must be worked up in as fresh a condition as possible—that is, immediately after they have become dry. Keeping them a long time injures them. One cannot work up larger quantities than 100 grams with the hand, and it takes a great deal of practice to master this quantity.

A sufficient separation of TO and TR is only obtained when the perfectly clear TO has taken up at least 50 per cent. of the solid substance, otherwise there remains in TR a more or less consider-

able quantity of TO, and one gets undesired reactions after injecting it. Anyone who wishes to undertake the making of TR must recollect that highly virulent living tubercle bacilli, in a dry state, have to be worked up; and that it is impossible to prevent the production of dust. I look on the danger associated with this as no small one, and I must admit that during these experiments I had the feeling as though I had to deal with explosive matter. I did not use a respirator, because it did not appear to me to offer any sufficient protection. It is impossible to prevent the bacilli dust settling on the clothes, and scattering itself about the room. I therefore consider it quite out of the question to be able to produce TR in at all large quantities by hand service. A uniformly good preparation, sufficient for all purposes, can be produced in large quantities by suitable machinery in a factory, and thus avoid the menacing danger of the working up process. Arrangements have been concluded, at my instigation, with the dye works of Messrs. Lucius and Brüning, Höchst-on-Main, to carry out the work wholesale, and they can supply the preparation TR as well as TO prepared after my method. Twenty per cent. of glycerine is added to the fluids to keep them, which from my previous experience is a sufficient protection against decomposition, and does not cause precipitation in TR.

The use and administration of the preparation are quite simple. Injections are given in the back by means of a syringe that can be well sterilised, just as in the case of tuberculin.

The fluid contains 10 mg. per c.cm. of the solid substance, and has to be diluted for use with physiological salt solution (not carbolic) to bring it to the requisite dose. One begins with  $\frac{1}{800}$  mg., which is such a small dose that only exceptionally does a reaction occur, but should this happen it must be further diluted. Injections should be made about every second day, gradually increasing the dose in such a way as to avoid temperature elevations of more than  $\frac{1}{2}$  degree (Centigrade). Any elevations of temperature that have been caused by the injection must have completely disappeared before a fresh injection is given. I have usually gone up to 20 mg., and then, if no reaction followed this dose, have stopped or given injections only at long intervals. When one wants to immunise animals one gives them, to begin with, as much as they can absorb—guinea-pigs, for instance, 2 to 3 mg., larger animals proportionately more. In case of tuberculous animals one must naturally begin with much smaller doses, as under some circumstances a dose of 2 mg. may be fatal.

I shall here only give a few brief remarks about the effects to be obtained with TR, and reserve a more complete account of them for a later period—that is, with reference to the treatment of patients.

In immunising healthy animals, and in treating the affected ones, the whole thing depends on introducing as large doses as possible. They must of course be measured in such a way that they will be well absorbed, but this is easily done by observing the amount of infiltration at the seat of inoculation. By observing these conditions I have succeeded in completely immunising a large number of guinea-pigs to such an extent that they could bear repeated inoculations with virulent cultures without becoming infected. The inoculation marks disappeared without leaving any trace behind, and the inguinal glands close to the seat of inoculation showed no change, in some cases months after the inoculation, while in others they were only slightly enlarged, but showed no sign of tubercular change; tubercle bacilli could never be found in them.

In a certain number of animals immunisation was not quite completed at the time of the first inoculation.

In these cases the inoculation wound had healed, but the inguinal glands were caseous. The internal organs of these animals were free from tuberculosis, while animals on which control experiments had been made showed far advanced general tuberculosis of lungs, spleen, and liver. Some animals showed tubercular disease of the lungs; while the liver and spleen had either no trace of disease or only slightly so; and I believe that in these cases we must assume that a slight degree of immunity was present at the time of inoculation.

Apart from these cases, I have seen such conditions only in guinea-pigs that had been treated with tuberculin, in a stage of the disease, however, that was too far advanced. In guinea-pigs which had been infected with tuberculosis, and then received injections of TR, retrograde changes were always found, in a more or less advanced degree, in the organs that were tubercular when the treatment was commenced.

For instance, in the liver and spleen such changes as these were observed. In the liver, instead of yellow necrotic nodules on the surface, one could see furrows and depressions which gave the organ a peculiar knobby appearance. The spleen also had a shrivelled appearance, which in some cases was so far advanced that only quite minute traces of the organ were left, to find which required very careful searching for.

From these experiments I have got the general impression that complete immunity takes place about two or three weeks after the application of large doses.

Guinea-pigs, in which the disease, as we know, takes a very rapid course, can only be successfully cured when the treatment is commenced early—that is, a week or two after inoculation.

This last rule obtains also in the case of tubercular human beings, in whom the treatment must not be commenced too late. At the beginning such small doses are given that no immunity worth mentioning is to be expected from them; and it is only when the doses have reached a large size—.5 to 1 mg.—that unmistakable immunity effects make their appearance. There is, however, a limit to the use of the preparation which must be laid down at the very beginning. A patient whose condition is such that he cannot have more than a few months to live, can expect no benefit from the use of it. It is also just as useless to treat patients with it who suffer from a secondary infection, such as might be caused by streptococci, and in whom the septic process has thrown the tuberculosis quite into the background. It is obvious that an immunity against tuberculosis can exercise no influence, or, at all events, none directly so, against streptococci and other pathogenic micro-organisms which often play such a fatal part in advanced tuberculosis.

Such conditions can usually be recognised by the state of the temperature, and in respect to this experience has taught us that patients whose temperature goes above 38° C. (100.4° F.) are only exceptionally suitable for the specific treatment of tuberculosis.

I have used the preparation in a fairly large number of suitable cases, chiefly in lupus cases, and I have attained a considerable improvement in these cases, far in advance of the success I obtained with ordinary tuberculin or with T.A. I say improvement intentionally, although a considerable number of the cases might be designated as healed according to ordinary ideas; but I consider it premature to use the expression “healing” until a sufficiently long period has passed over without relapses occurring. In lupus it was especially noticeable that local reactions were very slight, and nevertheless a continuously progressive improvement took place. In phthisical patients, also, there were none of the violent reactions so well known after the use of tuberculin, and which caused transitory infiltration in the diseased parts of the lungs. With T.R. a slight increase of râles was the only local symptom, and this soon disappeared. After a few injections the expectoration diminished

in quantity, and finally often dried up completely, and of course, tubercle bacilli were no longer to be found. The râles disappeared in a corresponding manner over the diseased area of the lung, and the area of dulness diminished.

In no case have I seen any alarming complications or injuries to health in other ways, such as might be ascribed to the preparation. Almost all the patients gained in weight from the beginning, and at the end of the treatment had put on weight to quite a considerable extent. The changes in the temperature curve were especially striking in those cases which had the well-known daily temperature variations of  $1^{\circ}$  C. and over. The irregular up and down line became more and more even, and gradually came down to the normal, almost straight line, just below  $37^{\circ}$  C. ( $98.6^{\circ}$  F.)

I do not venture to assert that the method practised by me up to this, in the use of TR, is the best. I mean starting with very small doses subcutaneously, and gradually increasing them up to about 20 mg. Possibly other methods may gain the object in view quicker and better; perhaps, also, a combination with TO, or with serum-preparations obtained from TO or TR; but only further experiments will teach us this.\*

At all events, I believe I can affirm with certainty that further improvements of the preparations themselves are not to be expected. These consist of highly virulent, fresh cultures, which were in a living state directly prior to the manufacture, and are brought into a soluble condition without the action of chemicals.

Nothing better of this kind can be produced: and whatever is to be gained with cultures of tubercle bacilli must be gained with these preparations.

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#### LEPROSY CONFERENCE.

THE following in brief are the conclusions of the Berlin Conference, October, 1897:—1. The *Bacillus lepræ* of Hansen is the virus of leprosy. 2. The mode of entry into the human organism is unknown. 3. Leprosy is a contagious disease, probably not hereditary. 4. Treatment has so far been unsuccessful. 5. Prevention is best secured by isolation. 6. Compulsory notification is recommended. The next Congress meets in 1900, probably in Paris.—*The Canadian Practitioner*.

\* Experiments are at present being made with TO and TR with the object of obtaining a serum.

*The Sero-therapy of Yellow Fever.\** By PROFESSOR DON JOSÉ SANARELLI, Director of the Institute of Hygiene, Monte Video. Translated from *La Semana Médica* by GEORGE FOY, M.D., U.C., Va.; F.R.C.S.; Hon. Fellow of the Southern Surgical and Gynecological Association, U.S.A.; Member of the Society of Anæsthetists, London; Surgeon to the Whitworth Hospital, Drumcondra.

THE one hope of a trustworthy remedy for yellow fever lies in the serum treatment.

In the hope of securing a serum possessed of curative and preventive properties we have given close attention to two important phenomena—immunity to the virus which is produced in those born in, or having lived a long time in, the country in which the disease is endemic, or as popularly said, “the acclimatisation,” and the acquired immunity secured by an attack of the fever. This last fact is noticeable in every case which has suffered from a severe attack.

In respect to acclimatisation, it is clear that the immunity it confers cannot be considered as due to any special habits physiologically acquired by adaptation to physical surroundings, but are to be explained perfectly by the phenomenon of acquired immunity to the poison of yellow fever, which our personal experience makes intelligible.

The easy and quick way in which the system becomes accustomed to small doses of the virus is very clearly manifest in our experience in the human being, and gives the idea that the condition is naturally acquired. The serum intended for the prophylaxis and cure of yellow fever in man is obtained from animals inoculated with the *Bacillus icteroides*.

It may be considered a trustworthy serum, not only having been obtained from animals which have borne lethal doses of yellow fever virus; but its power as a prophylactic and curative agent has been experimentally proven on rabbits.

I think it unnecessary to enter into the details of the method of preparing the serum; it is prepared by the methods and in accord with the general principles of immunisation, and is singular only in the difficulty of obtaining animals capable of tolerating strong doses of the virus, and producing a serum possessing prophylactic and curative properties. This result we obtained in horses, after

\* A paper read before the Society of Medicine and Surgery of St. Paul, Brazil.



twelve or fourteen months continuous and careful experimentation. The method of producing the yellow fever serum is not identical with that of diphtheritic serum. Until to-day I was unable to find in the bodies of inoculated animals the antitoxic substance.

Dogs, which after a year or more of inoculation with large doses, came to tolerate quantities of the virus which were greatly in excess of the ordinary lethal dose; they showed symptoms of toxicity by vomiting, falling down prostrate, and acute pyrexia after each injection.

I give the following example of a dog which was well inoculated, and which had been under treatment for more than fifteen months, and produced an excellent prophylactic and curative serum for rabbits:—In consequence of a phlebitis, with obliteration of a vein, an accidental multiplication of the *Bacillus icteroides* injected; died from the virus in forty-eight hours; presented at the autopsy a wasting of viscera, and the liver was so altered that it yielded on chemical analysis 82.72 of fat—a quantity of fat in excess of that cited as usual in yellow fever, and greater than that given by experimental poisoning with phosphorus or arsenic.

This example is cited as evidence that the condition of inoculation is not for the present characterised by the presence of antitoxin substances, and that the anti-yellow fever serum is alone able to exercise an action curative on the poison formed in the body until it amounts to a lethal quantity. This serum, as many others well known, possesses powers against the microbes, but has no antitoxin properties; they are bactericides, but not antitoxins. Their use in the treatment of yellow fever in the human being is efficacious only in the early stage of the disease—a very great obstacle to the treatment of the disease by sero-therapy.

For those who never have had personal experience of yellow fever, to all the European physicians who have not seen the disease, the ordinary account of the sickness is wholly misleading. They compare it to a milder type of cholera, and think that the principal lesion—the seat of selection—is to be found in the gastrointestinal tube; to them the legend “black vomit” represents the typical and most constant phenomenon. For this cause also the greater number of micro-biologists think that in a certain bacillus of extraordinary properties, whose field of action is the stomach, which an enthusiastic discoverer who is well known hastened to call “the crucible of yellow fever.” Nothing could be more arbitrary or more false.

Studying carefully a large number of patients with extreme

accuracy, we find a patient suffering from pyrexia, and with the general symptoms of toxæmia, whose more grave symptoms are far removed from the gastro-intestinal tube.

In yellow fever, as in many other general fevers, the digestive tube is affected, and many times it has a tendency to bleed, provoking also, as is well known, the "black vomit," but the systems most generally and seriously attacked are the renal and the nervous.

Few of our patients to-day present lesions of a serious nature in the digestive tube, they are albuminuric, anuric, or delirious. Further, in many epidemics "black vomit" and intestinal bleeding are the exception; but the symptom which appears early—the un-failing and inexorable precursor of death—is anuria.

Well then, the kidney being attacked by the toxin of yellow fever, the system has also uræmic poisoning to struggle against—every effort for life trusting to medicine, every trial of sero-therapy ends in failure.

To pretend to cure a patient when delirium or anuria is present simply implies submitting the unfortunate to the caprice of fortune; and the issue in such a case has no value as evidence for or against the use of serum-therapy.

At the beginning of this year I possessed some good serum—very efficacious on the animals of the laboratory. It was procured from two horses, A and E, the former of which was under treatment for eighteen months and the latter for a year. I had afterwards a bull, which I kept under treatment for a year, but the serum he furnished was of little value. I was anxious to test the serum on a human patient, and I am indebted to my friend and collaborateur, Dr. Seidl, Director of the Hospital of Saint Sebastian, of Rio Janeiro, for the first observations on the practical value of the anti-yellow fever serum.

Dr. Seidl, working with Drs. Tasjardo, Conto, and Da Rocha, was supplied with this horse serum, and used it, together with some which I had sent in December, 1897, on eight patients who presented in divers conditions the symptoms most characteristic of yellow fever. Of these eight patients five were already in the fourth day of the fever, and in a very serious condition; four were anuric and delirious. The remaining patients were also very seriously ill; although neither anuric nor delirious, yet they were albuminuric. One was in the second day of the fever, and the remaining two were in the third day. These three patients recovered after energetic treatment with the serum, and in the temperature charts sent to me by Dr. Seidl it may be

plainly seen that each injection of the serum was followed by a fall of temperature, a cessation of the more grave symptoms, and finally the beginning of a rapid convalescence.

The first investigation of the value of the serum presents a story whose lesson is easy of application. I did not hesitate to apply more generally the serum, to fully test its value and to make known with exactitude the indications for its use in the treatment of yellow fever. The occasion came at an opportune time, thanks to an invitation received in January last from the authorities and the medical profession in the Province of Saint Paul in Brazil.

The Province of Saint Paul is the richest in the Republic of Brazil; it is the loadstone for emigrants, fallen to-day on a sad period of trial which threatens to be fatal to her. The yellow fever, which until these last few years never extended beyond the sea-coast, has now advanced, as a fire, into all the cities and towns of the interior.

The spectacle is sad, the impression indescribable—most disheartening to the traveller as he journeys through these beautiful and rich lands where the gifts of civilisation and the labours of the immigrants have, in a few years, created centres of industry and commerce which yesterday were hives of energy, of prosperity, of riches, and to-day are ruins—homes for the outcast—breeding places of pestilence.

The medium of this rapid and widespread diffusion of the plague in the Province of Saint Paul has been the immigrant. Thousands and thousands of these unfortunates disembark yearly in the ports of Santos or Rio Janeiro, where yellow fever ever reigns as an endemic plague. Many of these, all of them during bad periods of the plague, contract the disease, and travel infected to die in the cities and towns of the interior, where they are said to create new foci of infection.

The yellow fever found in the interior is always much more severe, and has a higher mortality than that observed on the coast, as, for example, in Rio de Janeiro, Pernambuco, and Santos. In these latter cities the immigrants are simply wayfarers. The farm-labourers, which form the greater number of them, seek work on the farms in the interior, and the more intelligent artisan, from dread of the fever, also pushes on to the high lands of the interior to seek work in its towns and villages. It follows as a natural result that in Rio de Janeiro, Pernambuco, and Santos the yellow fever attacks with most frequency the indigent and the indolent who stay in the city slums, or those somewhat acclimatised by a

short or long residence, and the mortality averages 50 per cent. of those attacked.

To return to the consideration of the towns in the interior, the sick immigrant there encounters a new element. A European, recently landed, not accustomed to the climate, the habits or the life of an inter-tropical dweller, is weak, disarmed, and receptive of the endemic. Amongst these unfortunates the mortality of this fearful pestilence reached the dreadful percentage of 80 to 90 of those attacked. The recent outbreak of the fever in Camprinas, de Rio Claro, Araraquara, Yahu, Limeira, Pirassunanga, Ribeirão Preto, Ribeirão Bonto, San Carlos de Pinhal, Ita, Descalvados, and elsewhere little known in Europe, where in general they know very little of that which passes on the American side of the Atlantic, present such scenes of horror as are alone comparable to the legends of the invasions of pestilence during the Middle Ages in Europe.

The Governor and the Council of the sanitary services of the Province of Saint Paul, justly occupied with this grave state of affairs, deeply grieved, and pledged to protect the people, desired that my first experiments with serum should be made under conditions which allowed of the formation of a definite judgment on its value. They constituted a commission of distinguished clinicians, consisting of Senors Dr. Silva Prito, director of the sanitary services of the province, Drs. G. Ferreira and Vicira de Mello, Sanitary Inspector, and Dr. Espenheira, Director del Hospital de Aislamiento of Saint Paul. Afterwards the following were added to the Commission—Dr. Ad. Lutz, Director of the Institute of Bacteriology of Saint Paul, and his assistants, Drs. A. Mendonca and Vital Boazil.

The place selected for the experiments was Saint Charles of Pinhal, a city of about 25,000 inhabitants, situated about 820 miles above the sea-level and eight hours by rail from the city of Saint Paul. In Saint Charles the yellow fever has made a permanent home, putting to flight the inhabitants, who seek refuge in the surrounding plains and sow death amongst the few labourers who seek shelter in the silence of the deserted streets and abandoned houses.

Here is the tale of my labours, with which I was entrusted by the official Sanitary Commission of the Province of Saint Paul, as told in the meeting of the 8th of last March, before the Society of Medicine and Surgery in that city. The serum I proposed to use in these first cases was obtained, as already stated, from three different animals.

The serum of the horse was that with which I had experimented on animals and had found its activity truly remarkable, and which I had further tested on my own person a short time before leaving Monte Videe, and during my stay in Saint Charles of Pinhal. These injections given in doses large enough to convince me that the serum of the horse inoculated against the yellow fever was able to resist the virus of the fever, and, consequently, could be used without danger in the treatment of the sick.

In considering the serum of the ox, or serum F as it was commonly called, the experiments convinced me that its curative power was very little, for which reason I decided not to use it without the greatest care, and solely as a prophylactic. I have never had occasion to try this serum on the human being.

On arriving at Saint Charles we found the hospital wholly deserted of patients. The greater number of them overcome by a senseless and traditional horror of hospitals prefer to find death in their homes than secure safety in a hospital. Two patients, lads, whose father had died in the hospital, were admitted. Both of the little patients presented the characteristic symptoms of the disease, including "black vomit." Luis V., the elder patient, was in the second day of the sickness, and Asuncion V., his brother, was in the third day. They were immediately submitted to treatment, and the results were promptly seen in a lessening of the pyrexia, a disappearance of the albumen in the urine, and a general improvement. Convalescence quickly followed. During the whole period of treatment Asuncion got 20 c.c. of serum, and Luis 65 c.c. Encouraged by this first success, we decided to continue on the same line—that is, to treat only such cases as had not advanced beyond the initial stage, and to record our observations of such cases, and to treat them with moderate doses of the serum given hypodermically. Up to the 17th of February we admitted six other cases. One of these, Rafael M., was albuminuric, his urine was scanty on admission to hospital, and we failed to give him any relief. As we prognosticated, anuria resulted, and he died on the fourth day after admission. Of the other five—four convalesced after more or less severe attacks, which necessitated a prolonged treatment with serum injection; the fifth case succumbed from cerebral troubles on the tenth day.

These we call our first series of cases (2 deaths and 6 cures)—a result which was very valuable to us as an evidence of the effects of the treatment by serum in small doses. In the first place, these doses appeared too small, and secondly, the result was clearly that the first hypodermic did not produce a cessation and arrest of the

infection of the fever, so that in a short time the virus resumed its sway. Small doses failed to produce any appreciable good effect, although repeated frequently.

In cases which terminated in recovery, after an elevation of the temperature, more or less marked—which rise of temperature followed almost without exception as a specific and salutary reaction after the first hypodermics of the serum, and in every case where the vein was injected—the fever disappeared to return no more, and during the following days the thermometer recorded nothing more than a few fleeting and insignificant rises of temperature. During this time the ordinary symptoms of the fever disappear, and the case proceeds without accident to recovery. We have found the serum treatment to be free from the phenomena of mucous hæmorrhages, and, in referring to the function of the urinary organs, we notice that the serum produces a marked effect for good as a diuretic, in the majority of cases producing polyuria.

Now, if we consider that in the actual epidemic in Saint Charles the most important and serious symptom was anuria, the beneficial effect of the serum as a diuretic on the complication most insidious and to be feared of the disease will be appreciated.

In some patients of extreme sensibility, who appeared to be but little benefited by the hypodermics, it occurred to us to use intravenous injections of the serum.

The technique of these intravenous injections, which were always practised on the superficial veins of the forearm, is so easy and safe that its use ought not to be so rare in the practice of medicine.

The effects of these intravenous injections of the anti-yellow fever serum are very interesting.

After the injection, when the dose is very small (15 c.c.), the patient remains perfectly tranquil. But after a few minutes a slight reddening of the skin begins to appear over the whole breast and face; the conjunctivæ become injected, the pulse becomes stronger but less frequent, and almost becomes normal. The patient has a feeling of warmth in the head, he has a few attacks of coughing, and sometimes a desire to vomit, and occasionally he suffers from a mild and short attack of urticaria, appearing in different regions of the body.

Collecting all these preliminary observations, we resolved unanimously to adopt a method slightly different in our use of the serum in the succeeding cases that called for treatment, and it was decided to intervene quickly, administering full doses of the serum, adopting as our ordinary practice the intravenous injection, and to inject in

one dose a sufficient quantity of the serum to arrest the infection of the veins.

This method, which for convenience we called the "quick method," has given us much better results than the former, and we are able now to look upon it as complete.

I believe it useful to note that the intravenous injections of strong doses of serum should be carried out with certain precautions, which we have recognised by the observation of the variable amount of tolerance in patients submitted to the serum treatment.

Cases met with in the initial stage of the disease are much more sensitive to the remedy, and the reaction is much more energetic and prolonged than in those in whom the fever is well established. Yet leaving aside this distinct reaction, to explain which a theory is easy of invention, but which I think at present a profitless labour to discuss, I have observed that certain individuals and certain patients with pre-existing organic lesions, such as enlargement of the liver and the spleen from malaria, myocardic lesions and so forth, require much care in apportioning the intravenous injection dose.

Bearing well in mind all these things we commenced the new series of cases with a young labourer, Pascual R., who fell sick on the 17th February, with all the symptoms of a severe attack of yellow fever; violent rigors, headache, pains in his bones, sharp epigastric pain, marked injection of the face, temperature  $102.5^{\circ}$ , pulse 104. We immediately gave him two injections of 20 c.c. each, one intravenous and the other subcutaneous. Five minutes afterwards he presented an intense reaction, the skin became a bright red, the pulse fell to 88, there is a slight cough, and a general and intense agitation with rigors. Soon afterwards the temperature rose to  $105^{\circ}$ . Before bed hour the patient got a third injection (subcutaneous) of 20 c.c. of serum. The following morning the temperature fell to  $102^{\circ}$ . The case continued to progress, and on the fifth day the patient was declared to be convalescent.

This new series of cases, initiated with such a good result, includes fourteen patients, numbered from the 9th to the 22nd, both inclusive. All these cases were admitted to hospital in an advanced state of the fever, and were selected by us as suitable for testing the therapeutic properties of the serum; all cases which presented vague and uncertain symptoms were placed apart from those referred to above. We were, in consequence, dealing with patients in whom to judge by the severity of the initial symptoms we were very unlikely to secure a



favourable crisis. Of these fourteen patients ten recovered under the influence of the serum, each case giving evidence of the characteristic effects of the remedy—the relation between cause and effect being plainly demonstrated.

In some of these the “quick method” promptly changed the type of the disease, cutting short the course of the fever, and getting rid of its typical symptoms, and plainly showing the marked influence of the remedy on the yellow fever. One alone of the patients escaped the physiological action of the serum, Adrian H., a man of extraordinary strength, who was suffering from one of the most violent forms of the disease. Trusting, perhaps too much, in the natural resistance of the patient, we did not employ as large a dose of the serum as the case demanded, or as we otherwise should have done; the following day there appeared such an alarming nervous condition that we considered further treatment useless.

In considering the three cases which ended fatally in this our second series, it is necessary to remember that their condition on admission was deplorable, and offered no hope of success.

The first of these cases was that of a young Portuguese, of very limited intelligence, who rebelled against all treatment, and threatened personal violence to his attendants; with much difficulty some hypodermics of serum were given, but no intravenous injections would be attempted. He died five days after his admission to hospital.

The second case was that of a young woman, Louisa P., who was within one month of her labour, and was still suckling two children. She was admitted on the third day of her sickness in a truly deplorable state of emaciation. She was brought in by her husband, who became an inmate a few days afterwards. Two hypodermics were given, the “quick method” in this case being considered dangerous and useless. Her strength rapidly ran down, delirium appeared, and death soon followed.

The third case was that of an old man, G. P., who had a large liver, a greatly enlarged spleen, and a cachetic condition of body generally, with marked mental weakness. We commenced treatment by two injections—one intravenous of 50 c.c. of serum, and the other hypodermic of the same amount. The congestive phenomena, which followed almost immediately, were of such an alarming character that we feared some great lesion on the circulatory system existed and had been unobserved by us. Under the circumstances we discontinued the treatment and kept



the patient under observation for the few remaining days of his life.

In the total number of patients treated, numbering 22, we lost 6, statistics which I look upon as very good. We came to Saint Charles not to collect statistics but to test sero-therapy and report on the serious nature of the epidemic then existing there, and we have shown the good results of our treatment in all cases in which it was commenced sufficiently early; even taking all cases that came under our care the mortality did not exceed 27 per cent.—a death-rate which contrasts favourably with all other known methods of treatment. We have also found that the longer the period of inoculation of the animals yielding the same is continued the more active and trustworthy is the anti-virus; our practical experience of the drug has also enabled us to draw up more accurate rules for its administration. The treatment compares well with that adopted in Rio Janeiro, where the municipality returns show a death-rate in those attacked of 45 to 50 per cent., and of Saint Charles where it reached 80 per cent., and as we have shown above our fatal cases were such as offered no hope of recovery no matter what treatment was followed.

Inoculation by the serum as a prophylactic offers no difficulty, now that the remedy can be furnished in unlimited quantity, and it is the sole remedy against the recurring epidemics that are depopulating the country and converting its richest provinces into wildernesses.

One opportunity occurred for testing the prophylactic properties of the serum. In the prison of Saint Charles of Pinhal an outbreak of yellow fever took place in February last. The first victim was a prisoner who had been attacked suddenly; he, with others, lived in the common room under hygienic conditions which were far from good. The day following that on which the prisoner took ill, the sentinel, who was in charge of the common room was seized. A few days after another prisoner became a victim to the disease, and the prison became a focus of infection; up to this time no case of yellow fever had ever been known to occur in it. There seemed no hope for the unfortunate prisoners, and it was reasonably feared that they would one by one die off, as had happened in the prisons of Rio Claro, Linairo, and other cities of the Province of Saint Paul. One method alone seemed capable to avert the imminent danger. We visited the prison and inoculated all the prisoners and officers, except one who asserted that he was immune, having had the fever. Amongst others we inoculated

two soldiers who came from Europe a short time before. The effect of the inoculation was all that we hoped for. No fresh case of yellow fever occurred in the prison, and it ceased to be a focus of infection.

This good result was obtained under most unfavourable conditions; not only was the prison overcrowded and unsanitary, but we had run out of the horse-serum, and were dependent on the ox-serum which from experience we knew had not the same therapeutic power.

It is not difficult to recognise how valuable such a trustworthy prophylactic should be on board ship and in quarantine stations.

The distinguished bacteriologists who formed part of the scientific commission, Drs. Lutz, Mondouca, and Vedal Brasil, have isolated the *Bacillus icteroides* from the blood of three patients during the initial rigor. This result, obtained by these distinguished bacteriologists, was confirmed in all cases by the rapid reaction to the serum injection.

The Government of the Province of Saint Paul, from the report of the official commission who observed in Saint Charles of Pinhal the results of the serum treatment, curative and preventive, against the yellow fever, have ordered the building of a sero-therapy Institute for the treatment of yellow fever in the capital of the Province.

This institution will be completed in a short time, and will then enter on its mission of spreading the knowledge of sero-therapy, and making more practicable and safe the treatment, preventive and curative, of this dreadful (*indomable*) disease, which is called "the scourge of the Continent of America."

#### TEMPORARY INSANITY FROM THE USE OF SULPHATE OF ATROPIN IN THE EYE.

DR. A. H. EDWARDS reports the following cases of temporary insanity from the use of sulphate of atropin in diseases of the eye (*Am. Pract. and News*):—Case I.—A white adult man came to have a cataract operation performed. A weak solution of the sulphate of atropin was instilled three times into the eye, and in a few hours after the last instillation the patient lost his mind. Case II.—A negress came for a cataract operation. On the instillation of the drug she became insane. On her recovery he again used the same drug, and it had the same untoward effect as before. She was in good health, and did not dread the operation.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

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President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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### SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.

Sectional Secretary—E. J. MCWEENEY, M.D.

*Friday, February 25, 1898.*

The PRESIDENT in the Chair.

#### *Malaria.*

DR. J. B. COLEMAN exhibited blood slides from a case of tertian ague, showing the different stages of development of the *Plasmodium malarix*. He said that although malaria was unknown in Ireland now, it was not uncommon in the vicinity of Dublin in the early part of the present century, and he quoted some extracts from Graves's "Clinical Lectures" in support of this statement. Dr. Coleman's patient was a soldier, who had returned from India six months ago, and who was admitted to hospital with well-marked tertian intermittent fever.

PROF. O'SULLIVAN showed specimens of the malarial parasite. The case was that of Dr. H., residing in the Chota Nagpur district in Bengal, who had contracted a simple tertian ague in December, 1896. The examination was confined to a single attack, which Dr. H. allowed to run its course without treatment. Shortly before the next attack was due he took quinine, and although the attack took place in a mild form, there were very few parasites to be found in the circulating blood, and shortly afterwards they had entirely disappeared.

The fit began at 1 p.m. on Saturday, December 18; blood was taken at 2 p.m., 4 45 p.m., and 11 45 p.m. on Saturday, and at 9 30 a.m. on Sunday.

Specimens taken at 2 p.m. (temperature 102°) showed chiefly a delicate ring form, half or less than half the diameter of a normal

red corpuscle. The ring was circular or slightly oval, with a thickening at one side extending over one-third of the circumference, and a small, deeply-stained nodule opposite to the centre of the thickening. In a few cases the ring showed no thickening or nodule. In addition there were some segmentation forms, containing 17 to 20 spores in two rows, and pigment, which was in some cases diffused in coarse granules through the body; in others, collected in a ball in the centre. In the next two specimens (4 45 p.m., temperature  $103.2^{\circ}$ , sweating stage, and 11 45 p.m., temperature  $98.5^{\circ}$ ) nothing but ring forms were to be seen, showing, however, signs of further development—e.g., pigment granules in the thickened part and formation of a small, clear body, staining lightly with methylene blue at the side of the thickening. In some cases two rings and even three were found in the same corpuscle. These joined at a point in their circumference at the edge of the thickening.

In the specimens taken at 9 30 a.m. on Sunday no ring forms were found; the thickening had developed into a pigmented body as large or larger than the original ring, traces of which, with its nodule, could often be made out.

DR. E. J. McWEENY said he had never seen so beautiful a demonstration of the parasitology of malaria. What was particularly beautiful was the comparatively unstained appearance of the nucleus in each of the segments of the rosette to which Professor O'Sullivan had drawn attention. This nucleus of the protozoa, or, at any rate, of the lower protozoa, must be something quite different in its chemical characters from the higher series and certainly of the metazoa. This nucleus does not appear to contain chromatin, which has so strong an attraction for the basic anilins and for nuclear stains such as hæmotoxylin and carmine. He asked what method they had adopted for fixing the blood specimens? The fixing was admirable and faithful, and the biconcavity of the blood discs extremely well shown.

SURGEON-GENERAL POTTER did not think that the parasite was *different* in the *different* forms of malaria. He had himself suffered for years, more or less, from daily attacks of malarial fever, at times being confined to bed from very severe attacks. He thought that the expression "malarial poisoning" was the best name for the disease. Speaking generally, quinine was the best treatment, but, in some cases, quinine was absolutely useless, and then arsenic was often given with success. There was no doubt that malaria had a very injurious effect on the general health. He considered

change of air as an additional treatment very good. He thought that the wearing of flannels had a most beneficial effect in warding off malaria and other diseases. Hypodermic treatment of ague had not given good results.

DR. A. R. PARSONS said that he had seen the parasite of malaria easily without staining with an ordinary one-seventh objective. In Dr. Coleman's specimen the adult parasite took up practically the whole corpuscle, there being merely a ring-round, whereas, in Professor O'Sullivan's case there was comparatively little protoplasm destroyed. He was under the impression that as the tertian parasite grew it gradually destroyed the hæmoglobin and converted it into pigment till it had nearly the whole of the hæmoglobin destroyed; then showed a sporulation and the spores discharged into the blood stream. Did Dr. O'Sullivan think that the parasite in his specimen would have gone on increasing in size?

The PRESIDENT OF THE ACADEMY (Dr. Bennett) said that it was remarkable the way in which attacks of the fever were brought on by exposure to cold. On the theory of the parasite—what excited the growth of the parasite and what made it take on the form which produced fever owing to exposure to cold? As regards subcutaneous injection of quinine, he had seen a good deal of this himself, and the physicians in Bombay were well pleased with the treatment.

DR. J. B. COLEMAN, in reply, said that his specimens were fixed by immersion for about half an hour in equal parts of absolute alcohol and ether. They were then stained with alcoholic solution of eosin, and, having washed off that, methylene blue was applied in concentrated watery solution. He could give no information as to the life of the parasite outside the body, but this subject was being worked at by Surgeon-Major Ross. Infection took place through the respiratory organs. It has been proved that drinking water from a malarial district does not produce malarial fever. Ingestion of blood from malarial patients has also failed to produce the disease, but the disease is constantly produced by intravenous injection of such blood. Replying to Surgeon-General Potter, he said that Golgi in 1885–86 differentiated the parasites of mild tertian and quartan fever; and Marchiafava and Celli and Canalis in 1889–90 discovered a distinct variety of the parasite in æstivo-autumnal fevers. Mild quotidian fever is due to the simultaneous presence in the blood of two generations of the tertian parasite, or of three generations of the quartan, each group being 24 hours older than the preceding one. In quotidian fever

due to the tertian parasite a dose of quinine frequently checked the daily paroxysms by prolonging the interval to 48 hours; further administration of quinine cured the fever completely. The effect of quinine was to prevent the development of the young plasmodia. He agreed with Dr. Parsons that the fully-developed tertian parasite occupied the whole of the red cell. His case did not show segmentation occurring in the regular rosette form; but it must be remembered that in some cases of tertian ague segmentation occurred only in the spleen and bone marrow and internal organs, whilst cases of quartan fever seemed to have segmentation developed more frequently in the ordinary peripheral circulation. As regards the remarks of the President of the Academy about exposure to cold causing paroxysms, he (Dr. Coleman) had noticed that himself.

PROF. O'SULLIVAN, replying to Dr. McWeeney, said the cover-glasses were fixed by heating to  $115^{\circ}$  C., and stained with methylene blue and eosin. In reply to Dr. Parsons, Prof. O'Sullivan said the forms found in the early stages corresponded closely with those described by Mannaberg as appearing in the quotidian and malignant tertian fevers, while the segmentation corresponded to the benign tertian, to which the clinical course of the fever, its amenity to quinine, the absence of crescents, and the sporulation in the circulating blood all seem to point. It was also remarkable that, although conjugation forms were present, resembling precisely those which Mannaberg has delineated as the antecedent to crescent formation, no crescents were found, in spite of repeated search during and for some weeks after the attack.

#### *Fracture of Spine and Sacrum.*

DR. E. H. BENNETT exhibited the lumbar spine and sacrum of a man who was killed by the falling of a weight of two tons (a parcel of grain being unloaded from a ship), which crushed him on his face on the deck of the vessel. The second, third, fourth, and part of the fifth lumbar vertebræ, deprived of their transverse process and, in part, of their spine, were displaced forwards. The sacrum, with a part of the body of the fifth lumbar, was detached from the innominales, and displaced forwards into the pelvis.

DR. KNOTT asked if the extravasated blood reached high up in the vertebral canal? Was there any consciousness left on admission to hospital?

DR. E. H. BENNETT, in reply, said that there was no consciousness left on admission. There was no doubt that the whole spinal canal was injected to the utmost with blood.

*Specimen of Complete Osseous Ankylosis of Hip and Sacro-iliac Joints on one side.*

DR. J. KNOTT made a communication on a specimen of above. He thought that the specimen might be worthy a passing notice from the Pathological Section, as the pelvic section of it presented the special deformity formerly described by Professor Naegelé, of Heidelberg, as the "Pelvis Obliqua Ovata," while it offered the additional complication of complete ankylosis of the hip-joint of the corresponding side. Professor Naegelé's experience of this variety of pelvic deformity was that of the difficulty to which it gave rise during parturition, which had been the means of drawing his attention to it. He had never found any external cicatrization, had never been able to obtain a history of caries, had never known the condition to be diagnosticated during life, and had found it to be invariably fatal to both mother and child. It had been one of the many triumphs of the Dublin School of Obstetric Surgery that the existence of this pathological condition was first discovered during life in the Rotunda Hospital, and by the late Professor Sir Edward Sinclair, of the Dublin University. This fact, and the assurance that he had received from the President of the Academy—the highest authority on the surgical pathology of the skeleton with whom he was acquainted—that the specimen was unique in his experience, had determined him (Dr. Knott) to lay the specimen before the Pathological Section of the Royal Academy of Medicine in Ireland.

DR. E. H. BENNETT said that he had never before seen a similar specimen. From the appearance of the bones it seemed that the sacro-iliac synchondrosis depended on the affection of the hip, and that it was induced by it. The specimen presented an osseous ankylosis from destructive inflammation of the hip-joint distinct from rheumatism.

DR. KNOTT replied.

*Senile Hypertrophy of the Prostate.*

MR. TOBIN read the report of a case of prostatic hypertrophy which he had treated twenty months ago by resection between ligatures of a half inch of the vas deferens on each side. The patient had the usual symptoms, and at the time of operation had not passed water without the help of a catheter for three months. He was a nervous man who could not be taught to pass a catheter for himself. Two days after the operation a little water began to pass naturally, and he was discharged from hospital fairly well in three

weeks. His condition, 1st February, 1898, twenty months after the operation, was as follows :—He states that, although he does not lead a temperate life, he has no kind of urinary trouble since he was discharged from hospital, and that his sexual functions are quiescent. A digital examination per rectum finds the prostate very small. A catheter passed after micturition shows the bladder to be empty. The testicles have not diminished in size, and are, as far as one can judge, normal. Testicular feeling is present.

*On each side below the point of resection the vas deferens is swollen into what might be called a retention cyst the size of a small walnut. Fluid drawn from one of these swellings was found crowded with active spermatozoa. (The patient was shown at the Surgical Section of the Academy.)*

With reference to this case, said Mr. Tobin, I would remark that if the improvement in his condition is due to the resection of the vasa deferentia, I see no way in which the operation could act, since no atrophy of the testicles has occurred, except by inducing a quiescent state of the prostate gland by cutting off the seminal fluid from the regions where its presence has a stimulating effect.

In addition to this case I have in my books quite a number of cases in which patients complained of some condition interfering with the free emission of seminal fluid as existing for some time previous to the development of the urinary symptoms that usually call attention to enlargement of the prostate. I, therefore, beg to submit, for the consideration of the Academy, that the following may in some cases be the explanation of the cause of this disease. In late middle life the incidents that predispose to hæmorrhoids, but especially sedentary habits and the abuse of alcoholic stimulants, and in some cases the after-effects of gonorrhœal inflammation of prostate and bladder, cause a condition that prevents the seminal canals emptying themselves satisfactorily. Consequently there is established a chronic seminal irritation in the vasa deferentia at the point where they are enlarged and sacculated just before entering the prostate, and a vicious circle of incidents leading to chronic prostatic hypertrophy. It is fair to suppose that if the prostate, whether hypertrophied or normal, withers when the testicles are removed, it will grow when it gathers from the testicle increased vascularity and excitement.

DR. KNOTT asked Mr. Tobin if he believed that double castration was a cure for senile enlargement of the prostate. Reports were very contradictory.

DR. E. H. BENNETT said that ligature of the vas deferens was



different from castration, as the nerves, &c., supplied to the testis remained. If castration was to affect the nutrition of the prostate, it must do so simply by shutting off the stream passing through the prostate, and not by any reflex action. He thought it a misnomer to call the operation of ligature of the vas deferens castration.

DR. E. J. McWENEY said that the impression he was under about the influence of castration on producing diminution of the size of the enlarged prostate was that there was some kind of internal secretion poured into the general circulation by the testicle, and the existence of which was necessary for the well-being and full development of the prostate, and that when this was cut off the prostate underwent atrophy. The difficulty that he saw in the very interesting hypothesis put forward by Mr. Tobin was that he failed to understand what would be the cause of obstruction in the emission of semen in the patients he mentioned.

MR. TOBIN, replying to Dr. Bennett, said he had not intended to convey that ligature of the vas deferens was the same thing as castration. He believed that castration was followed by very much more rapid collapse and atrophy of the prostate than ligature of the vas. He wished to point out that some excitement of the prostate that he supposed to be a cause of its increased growth comes from the vas deferens, and he supported that point by the case related. As to Dr. McWeeney's remarks about obstruction, the proof, of course, was difficult. With regard to the view that atrophy of prostate following double castration was due to the cutting off of some secretion which entered the blood, that he believed was hypothetical, and there were some experiments which went against that theory. White, of Philadelphia, had proved that unilateral castration is followed by atrophy of the prostate on that side only. It was, of course, an exceedingly difficult question to solve.

The Section then adjourned.

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#### CONGENITAL DEFORMITIES OF THE FORE-ARM.

THE following congenital deformities of the fore-arm are reported by Dr. H. L. Taylor (*Am. Pract. and News*):—Case I.—Girl, five weeks old; absence of both radii. Case II.—Girl, two weeks old; absence of the right radius and both thumbs, with their metacarpal bones. Case III.—Boy, five weeks old; radii abnormally small. Case IV.—Girl, two years and a half old; absence of ulna and fourth and fifth digits, with their metacarpal bones.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.;  
F.R.C.P.I.; F. R. Met. Soc.;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

## VITAL STATISTICS

*For four weeks ending Saturday, April 23, 1898.*

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Average Rate for 4 weeks	Towns	Weeks ending				Average Rate for 4 weeks
	April 2	April 9	April 16	April 23			April 2	April 9	April 16	April 23	
23 Town Districts	81.7	25.5	27.1	25.8	27.5	Limerick -	37.9	47.7	37.9	29.5	38.2
Armagh -	42.8	21.4	35.6	14.3	28.5	Lisburn -	25.7	17.0	17.0	21.3	20.3
Ballymena	28.2	45.1	16.9	5.6	24.0	Londonderry	34.6	12.6	18.8	28.3	23.6
Belfast -	26.2	26.2	27.6	26.4	26.6	Lurgan -	22.8	27.4	36.5	27.4	28.5
Carrickfergus	23.4	23.4	29.2	23.4	24.9	Newry -	20.1	20.1	20.1	20.1	20.1
Clonmel -	58.4	14.6	34.1	14.6	30.4	Newtownards	22.7	28.3	28.3	79.4	39.7
Cork -	44.3	29.8	24.9	31.1	32.5	Portadown	18.6	30.9	30.9	24.7	26.3
Drogheda -	34.2	19.0	34.2	22.8	27.5	Queenstown	17.2	5.7	28.7	11.5	15.8
Dublin -	34.0	23.4	26.4	22.2	26.5	Sligo -	15.2	25.4	15.2	35.5	22.8
Dundalk -	20.9	25.1	8.4	37.7	23.0	Tralee -	78.3	28.0	16.8	33.6	39.3
Galway -	41.5	18.9	56.7	56.7	43.4	Waterford	17.9	33.8	27.9	25.9	26.4
Kilkenny -	33.0	18.9	23.6	33.0	27.1	Wexford -	36.1	31.6	31.6	13.5	28.2

In the week ending Saturday, April 2, 1898, the mortality in thirty-three large English towns, including London (in which the rate was 21.8), was equal to an average annual death-rate of 21.5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24.2 per 1,000. In Glasgow the rate was 26.1. In Edinburgh it was 22.9.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 31·7 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,007,798.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in sixteen of the districts to 11·2 in Tralee—the 14 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 153 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 2 from whooping-cough, 4 from diphtheria, 7 from enteric fever, and 3 from diarrhoea. The 64 deaths in Cork comprise one from each of the following, viz.:—whooping-cough, enteric fever, and diarrhoea. The 22 deaths in Londonderry comprise 4 from whooping-cough.

In the Dublin Registration District the registered births amounted to 293—156 boys and 137 girls; and the registered deaths to 235—127 males and 108 females.

The deaths, which are 21 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 35·1 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 34·0 per 1,000. During the first thirteen weeks of the current year the death-rate averaged 32·4, and was 0·3 under the mean rate in the corresponding period of the ten years 1888–1897.

Deaths from zymotic diseases, which had fallen from 30 in the week ended March 19 to 22 in the following week, rose to 34, or 5 over the average for the corresponding week of the last ten years. The 34 deaths comprise 3 from scarlet fever (scarlatina), 8 from influenza and its complications, 5 from whooping-cough, 4 from diphtheria, 1 from ill-defined fever, 3 from enteric fever, 1 (in the Richmond District Lunatic Asylum) from beri-beri, 1 from choleraic diarrhoea, 3 from diarrhoea, 1 from dysentery, and 2 from erysipelas.

The cases of scarlatina admitted to hospital amounted to 47, or 23 in excess of the number of admissions in the previous week. Thirty-four scarlatina patients were discharged, 2 died, and 166 remained under treatment on Saturday, being 11 over the number in hospital at the close of the preceding week. There were besides 16 convalescents at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Twenty-four cases of enteric fever were admitted to hospital,

against 21 in the preceding week. Fourteen patients were discharged, 3 died, and 118 remained under treatment on Saturday, being 7 over the number in hospital on that day week.

Deaths from diseases of the respiratory system, which had fallen from 61 in the week ended March 12 to 42 in the following week and 38 in the week ended March 26, rose to 52, or 5 over the average for the corresponding week of the last ten years. The 52 deaths comprise 29 from bronchitis, 19 from pneumonia or inflammation of the lungs, and 2 from croup.

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In the week ending Saturday, April 9, the mortality in thirty-three large English towns, including London (in which the rate was 19·6), was equal to an average annual death-rate of 20·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·1 per 1,000. In Glasgow the rate was 26·3, and in Edinburgh it was 17·6.

The average annual death-rate in the twenty-three principal town districts of Ireland was 25·5 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in sixteen of the districts to 5·6 in Tralee—the 5 deaths from all causes registered in that district comprising 1 from typhus. Among the 153 deaths from all causes registered in Belfast are 1 from whooping-cough, 4 from diphtheria, 1 from simple continued fever, 15 from enteric fever, and 1 from diarrhoea. The 43 deaths in Cork comprise 1 from whooping-cough and 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 163—73 boys and 90 girls; and the registered deaths to 163—71 males and 92 females.

The deaths, which are 39 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·3 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 23·4 per 1,000. During the fourteen weeks ending with Saturday, April 9, the death-rate averaged 31·9, and was 0·7 under the mean rate in the corresponding period of the ten years 1888–1897.

The number of deaths from zymotic diseases registered was 19, being 9 below the average for the corresponding week of the last

ten years, and 15 under the number for the previous week. The 19 deaths comprise 9 from influenza and its complications, 2 from whooping-cough, 2 from diphtheria, 8 from enteric fever, 1 from diarrhoea, and 1 from dysentery.

The weekly number of cases of scarlatina admitted to hospital fell to 30. Twenty-seven scarlatina patients were discharged, and 169 remained under treatment on Saturday, being 8 over the number in hospital on that day week. This number is exclusive of 16 convalescents under treatment at Beneavin, Glasnevin.

Only 10 cases of enteric fever were admitted to hospital, being 14 under the admissions in the preceding week and 11 under those in the week ended March 26th. Twenty-six patients were discharged, 3 died, and 99 remained under treatment on Saturday, being 19 under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system was 36, or 12 below the average for the corresponding week of the last ten years, and 16 under the number for the previous week. The 36 deaths comprise 28 from bronchitis and 10 from pneumonia.

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In the week ending Saturday, April 16, the mortality in thirty-three large English towns, including London (in which the rate was 19·1), was equal to an average annual death-rate of 19·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·5 per 1,000. In Glasgow the rate was 22·0, and in Edinburgh it was 22·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 27·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in seventeen of the districts to 5·8 in Belfast—the 161 deaths from all causes registered in that district comprising 3 from measles, 5 from whooping-cough, 1 from diphtheria, 21 from enteric fever, and 4 from diarrhoea.

In the Dublin Registration District the registered births amounted to 186—95 boys and 91 girls; and the registered deaths to 182—98 males and 84 females.

The deaths, which are 3 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·1 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions

from localities outside the district, the rate was 26·4 per 1,000. During the fifteen weeks of the current year the death-rate averaged 31·5, and was 0·7 under the mean rate in the corresponding period of the ten years 1888–1897.

Twenty-three deaths from zymotic diseases were registered, being equal to the average for the corresponding week of the last ten years, but 4 over the number for the previous week. The 23 deaths comprise 2 from scarlet fever (scarlatina), 9 from influenza and its complications, 8 from whooping-cough, 2 from diphtheria, 3 from enteric fever, and 1 (in the Richmond District Lunatic Asylum) from beri-beri.

The weekly number of cases of scarlatina admitted to hospital declined to 22. Fourteen scarlatina patients were discharged, 2 died, and 175 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week. This number is exclusive of 17 convalescents at Beneavin, Glasnevin.

Nineteen cases of enteric fever were admitted to hospital, being 9 in excess of the admissions for the preceding week, but 5 under the number for the week ended April 2. Nineteen patients were discharged, 2 died, and 97 remained under treatment on Saturday, being 2 under the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 32, or 4 below the average for the corresponding week of the last ten years, and also four under the number for the preceding week. The 32 deaths comprise 19 from bronchitis and 11 from pneumonia.

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In the week ending Saturday, April 23, the mortality in thirty-three large English towns, including London (in which the rate was 17·9), was equal to an average annual death-rate of 18·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·0 per 1,000. In Glasgow the rate was 22·6 per 1,000, and in Edinburgh it was 19·7.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 25·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·1 per 1,000, the rates varying from 0·0 in seventeen of the districts to 5·6 in Tralee—the 6 deaths from all causes registered in that district

comprising 1 from whooping-cough. Among the 154 deaths from all causes registered in Belfast are 3 from measles, 3 from whooping-cough, 16 from enteric fever, and 4 from diarrhoea.

In the Dublin Registration District the registered births amounted to 204—99 boys and 105 girls; and the registered deaths to 156—79 males and 77 females.

The deaths, which are 26 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·3 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 22·2 per 1,000. During the sixteen weeks ending with Saturday, April 23, the death-rate averaged 31·0, and was 0·9 under the mean rate in the corresponding period of the ten years 1888—1897.

Twenty-five deaths from zymotic diseases were registered, being 3 over the average for the corresponding week of the last ten years, and 2 over the number for the previous week. They comprise 5 from scarlet fever (scarlatina), 8 from influenza and its complications, 2 from whooping-cough, 1 from diphtheria, 2 from enteric fever, 1 from diarrhoea, and 2 from dysentery.

Thirty cases of scarlatina were admitted to hospital. Twenty-one scarlatina patients were discharged, 1 died, and 183 remained under treatment on Saturday, being 8 over the number in hospital at the close of the preceding week. This number does not include 16 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 16, being 3 under the admissions in the preceding week. Twenty-four patients were discharged, 1 died, and 88 remained under treatment on Saturday, being 9 under the number in hospital on that day week.

The hospital admissions included also 6 cases of measles. Eight cases of that disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system, registered was 32, being equal to the number for the preceding week, but 6 under the average for the 16th week of the last ten years. The 32 deaths consist of 19 from bronchitis, 12 from pneumonia, and 1 from croup.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of April, 1898.*

Mean Height of Barometer, -	-	-	29·828 inches.
Maximal Height of Barometer (24th, 9 p.m.), -	-	-	30·197 „
Minimal Height of Barometer (30th, 3 p.m.), -	-	-	29·220 „
Mean Dry-bulb Temperature, -	-	-	48·7°
Mean Wet-bulb Temperature, -	-	-	45·5°.
Mean Dew-point Temperature, -	-	-	42·2°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	-	-	·270 inch.
Mean Humidity, -	-	-	79·5 per cent.
Highest Temperature in Shade (on 7th), -	-	-	64·7°.
Lowest Temperature in Shade (on 5th), -	-	-	33·4°.
Lowest Temperature on Grass (Radiation) (on 5th), -	-	-	29·7°.
Mean Amount of Cloud, -	-	-	57·0 per cent.
Rainfall (on 16 days), -	-	-	2·666 inches.
Greatest Daily Rainfall (on 30th), -	-	-	·956 inch.
General Directions of Wind, -	-	-	W., S.W., S.

*Remarks.*

A mild, genial spring month, very favourable to vegetation. The heavy rains which fell on the 11th, 23rd, and 30th, made up 75 per cent. of the total precipitation of the month—2·003 inches out of 2·666 inches. A remarkable and sudden increase of temperature occurred between the 5th and 6th. At the close many forest trees were in full leaf.

In Dublin the arithmetical mean temperature (49·7°) was 2·0° above the average (47·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 48·7°. In the thirty-three years ending with 1897, April was coldest in 1879 (the cold year) (M. T.=44·5°), and warmest in 1893 (M. T.=51·4°). The month of April, 1898, was the warmest for at least 30 years.

The mean height of the barometer was 29·828 inches, or 0·022 inch below the average value for April—namely, 29·850 inches. The mercury rose to 30·197 inches at 9 p.m. of the 24th, and fell to 29·220 inches at 3 p.m. of the 30th. The observed range of atmospheric pressure was, therefore, not quite one inch—namely, ·977 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 48·7°, or 7·3° above the



value for March, 1898. Using the formula, *Mean Temp.* = *Min.* + (*max.* — *min.* × .476), the value is 49.4°, or 2.0° above the average mean temperature for April, calculated in the same way, in the twenty-five years, 1865–89, inclusive (47.4°). The arithmetical mean of the maximal and minimal readings was 49.7°, compared with a twenty-five years' (1865–1889, inclusive), average of 47.7°. On the 7th the thermometer in the screen rose to 64.7°—wind, S.S.W.; on the 5th the temperature fell to 33.4°—wind, S.S.E. The minimum on the grass was 29.7°, also on the 5th.

The rainfall was 2.666 inches, distributed over 16 days. The average rainfall for April in the twenty-five years, 1865–89, inclusive, was 2.055 inches, and the average number of rainy days was 15.2. The rainfall and the rainy days, therefore, were above the average. In 1877 the rainfall in April was very large—4.707 inches on 21 days; in 1882, also, 3.526 inches fell on 20 days, and in 1894, 3.123 inches on 20 days. On the other hand, in 1878, only .498 inch was measured on 8 days; in 1870, only .838 inch fell, also on 8 days; and in 1896, only .883 inch on 16 days.

Fog was observed on the 5th, 18th, 22nd, 24th, and 25th. High winds were noted on 8 days, reaching the force of a gale on the 10th and 30th. Hail fell on the 10th. The temperature rose to or above 60° in the screen on 6 days. It only once failed to reach 50° (on the 30th). It never fell to 32° in the screen, and on only 2 nights did it fall below 32° on the grass. The mean lowest temperature on the grass was 40.2°, compared with 37.7° in 1897, 40.6° in 1896, 37.8° in 1895, 40.0° in 1894, 38.2° in 1893, 32.4° in 1892, 34.1° in 1891 and 1890, 34.4° in 1889, 34.6° in 1888, and 31.6° in 1887. Solar halos were seen on the 7th, 8th, 9th, and 25th, a lunar halo on the 1st.

The month opened with very favourable weather. The nights were sharp, but the thermometer rose in the shade to 53.6° on Friday, the 1st, and to 52.7° on Saturday, the 2nd. On the last-named day a new depression was approaching the N.W. of Ireland from the Atlantic.

The most remarkable feature in the weather of the week ended Saturday, the 9th, was the sudden bound into summer from winter which occurred on Wednesday, the 6th. At the beginning fresh westerly winds were blowing, accompanied by showers. At 8 a.m. of Monday a deep V-shaped subsidiary depression lay off the S.W. coast of Norway, and northerly winds were blowing over the British Islands. The sky was clear and the air was keen, although

hot sunshine prevailed. Sleet fell in Scotland, hail showers in the North of England. An area of high atmospheric pressure passed eastward across Ireland and England in the rear of the above-mentioned depression, with the result that a decided "chill" occurred in these countries on Monday night, the thermometer falling in the shade to  $28^{\circ}$  at Parsonstown,  $33^{\circ}$  in Dublin,  $32^{\circ}$  in London,  $27^{\circ}$  at Oxford,  $25^{\circ}$  at Cambridge, and  $24^{\circ}$  at Loughborough. The wind now shifted to S.S.E. in Ireland and a sudden rise of temperature took place, so that on Wednesday the thermometer reached  $63.1^{\circ}$  in the screen in Dublin—the highest since September 28th, 1897. On Thursday the maximum was  $64.7^{\circ}$ , and on Friday it was  $63.0^{\circ}$ . A depression on the night of the last-named day was followed by showers, westerly winds, and a lower temperature on Saturday. Solar halos were seen on each of the last three days. The mean height of the barometer was 29.904 inches, pressure varying from 30.125 inches at 9 a.m. of Tuesday (wind, S.S.E.) to 29.606 inches at 7 15 a.m. of Saturday (wind W.). The corrected mean temperature was  $51.0^{\circ}$ . The mean dry bulb reading at 9 a.m. and 9 p.m. was  $50.3^{\circ}$ . The screened thermometers fell to  $33.4^{\circ}$  on Tuesday, and rose to  $64.7^{\circ}$  on Thursday. The air was particularly dry on Good Friday. Rain fell on three days to the amount of .103 inch, .073 inch being measured on Saturday.

The weather of the week ended Saturday, the 16th, was of a distinctly changeable and unsettled type, but in the main favourable to both health and vegetation. Easter Day was very unsettled. Strong, squally S.W. winds and heavy showers of rain and hail prevailed in Ireland and parts of Great Britain, thunder and lightning being reported from Valentia Island and from Dublin, thunder only from York, and lightning from Yarmouth. These electrical disturbances were connected with a subsidiary depression which reached Denmark on Monday morning. Another subsidiary appeared off the South of Ireland at noon of Easter Monday, thence travelling eastward across England. It caused very wet, dull weather—.97 inch of rain being measured at York, .76 inch at Liverpool, .85 inch at Roche's Point, .48 inch at Loughborough, and .44 inch in Dublin. On Tuesday night a large primary depression passed northwards over the West of Ireland, giving a rainfall of one inch to Valentia and of half an inch to Parsonstown. The weather now became fair and bright, though at times showery, in Ireland, while a V-shaped depression passing across England produced wet weather in England on Thursday. On Friday heavy showers of rain and hail fell to the S.E. of Dublin,

but the weather remained very fine and dry in the city itself. Thunder and lightning occurred at Roche's Point, Cork, and in central England in the course of the day. Saturday also was most favourable. In Dublin the mean atmospheric pressure was 29·724 inches, the barometer falling to 29·364 inches at 2 30 p.m. of Sunday (wind, W.S.W.) and rising to 30·002 inches, at 9 a.m. of Saturday (wind, W.). The corrected mean temperature was 49·0°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 48·2°. On Sunday the shade thermometers registered 60·6°, on Tuesday they fell to 37·8°. The rainfall was ·666 inch on four days, ·439 inch being registered on Monday. The prevailing winds were westerly (S.W. to N.W.).

Changeable, but generally favourable, weather prevailed during the week ended Saturday, the 28rd. Curious troughs of relatively low atmospheric pressure advanced eastwards across Ireland on the nights of Sunday and Tuesday. But these V-shaped depressions filled up or dispersed when they reached Great Britain, after causing heavy rains in most parts of Ireland. The east coast near Dublin, however, received only moderate showers, which hastened spring vegetation in a wonderful way. The modification observed in the low pressure systems seemed to be caused by the persistent presence of an anticyclone over the extreme North of Europe, where also winter lingered—at Haparanda, on the Gulf of Bothnia, the night minima were 0°, 10°, 7°, 20°, 12°, 18°, and 10°, respectively—sufficiently low temperatures for the second half of April. The diurnal range of temperature at inland stations even in the British Isles was at times large—on Thursday night the thermometer fell to 48° at Parsonstown and 30° at Cambridge from maxima of 67° and 60° respectively. In Dublin the mean height of the barometer was 29·932 inches, pressure ranging from 29·591 inches at 9 a.m. of Monday (wind, S.S.E.) to 30·185 inches at 9 a.m. of Thursday (wind, N.N.W.). The corrected mean temperature was 50·2°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 49·2°. On Wednesday the screened thermometers rose to 60·6°, on Friday they fell to 41·5°. Rain fell on five days to the amount of ·787 inch, ·098 inch being measured on Monday and as much as ·608 inch on Saturday. The wind was variable, and light except on Sunday night and Monday forenoon, when it blew freshly from S.S.E.

In the week ended the 30th favourable but not settled weather prevailed until Saturday, when there was a violent rainstorm. On and after Tuesday rain fell copiously in Great Britain, and on

Saturday there was a heavy downpour in Ireland. Throughout the period an anticyclone was found over Scandinavia. On Monday and Tuesday this high pressure system spread south-westwards across the British Isles, and fine but cool and somewhat foggy or cloudy weather prevailed. Throughout the greater part of Monday a well-defined solar halo was visible. On Tuesday morning a large though shallow area of low atmospheric pressure appeared over the Bay of Biscay and Central France. This system moved northwards to the South of England, growing deeper as it advanced. It led to a thunderstorm in Kent and to plentiful rain-falls in the S. and E. of England, and later on in Scotland also. On Friday morning a still larger and deeper depression appeared off the S.W. of Ireland, in which country rain began to fall. Saturday was very inclement, and a severe rainstorm occurred in the Dublin district,  $\cdot 929$  inch falling between 9 a.m. and 4 p.m. The wind was first E.S.E., then N.E., N., and finally W. on that day. In Dublin the mean height of the barometer was  $29\cdot 736$  inches, pressure rising to  $30\cdot 197$  inches at 9 p.m. of Sunday (wind, calm) and falling to  $29\cdot 220$  inches about 3 p.m. of Saturday (wind, W.). The corrected mean temperature was  $48\cdot 5^{\circ}$ . The mean dry bulb reading at 9 a.m. and 9 p.m. was  $47\cdot 9^{\circ}$ . On Monday the screened thermometers fell to  $38\cdot 7^{\circ}$ , on Thursday they rose to  $57\cdot 7^{\circ}$ . Rain fell on three days to the amount of  $1\cdot 099$  inches,  $\cdot 956$  inch being measured on Saturday. E. and S.E. winds prevailed.

The rainfall in Dublin during the four months ending April 30th amounted to  $7\cdot 236$  inches on 64 days, compared with  $9\cdot 554$  inches on 79 days in 1897,  $5\cdot 781$  inches on 63 days in 1896,  $10\cdot 238$  inches on 65 days in 1895,  $9\cdot 151$  inches on 78 days in 1894,  $6\cdot 242$  inches on 56 days in 1893,  $5\cdot 922$  inches on 61 days in 1892, only  $3\cdot 203$  inches on 46 days in 1891, and a twenty-five years' average of  $8\cdot 466$  inches on  $66\cdot 2$  days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall amounted to  $4\cdot 145$  inches on 15 days. The heaviest falls in 24 hours were  $\cdot 760$  inch on the 30th and  $\cdot 660$  inch on the 11th. The total rainfall in 1898, up to April 30th, was  $8\cdot 890$  inches on 56 days, compared with  $13\cdot 080$  inches on 80 days in 1897,  $5\cdot 686$  inches on 50 days in 1896,  $12\cdot 570$  inches on 54 days in 1895,  $12\cdot 456$  inches on 70 days in 1894, and  $8\cdot 530$  inches on 54 days in 1893.

At Cloneevin, Killiney, Co. Dublin,  $3\cdot 13$  inches of rain fell on 17 days. The maximal fall in 24 hours was  $1\cdot 04$  inches on the 30th. The average rainfall in April of the twelve years, 1885-96,

was 1·648 inches on 13·2 days. Since January 1, 1898, 7·74 inches of rain fell at this station on 61 days, compared with 10·36 inches on 83 days in 1897, 5·27 inches on 55 days in 1896, 11·28 inches on 66 days in 1895, 9·09 inches on 74 days in 1894, and 6·94 inches on 57 days in 1893.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 4·441 inches on 15 days, compared with 3·406 inches on 19 days in April, 1897. On the 11th ·592 inch was measured; on the 23rd, ·620 inch; and on the 30th, 1·270 inches. The maximal temperature in the shade was 61·0° on the 7th. The minimal temperature in the screen was 32·8° on the 5th. At this climatological station 9·208 inches of rain fell on 55 days up to April 30th, 1898, compared with 13·492 inches on 76 days in the first four months of 1897.

#### THE SINS OF THE PESSARY.

F. L. NEUGEBAUER has collected 864 cases of injuries from pessaries, and states that in 112 there was perforation of a neighbouring organ, the rest due to abuse, neglect, being forgotten, &c.—*Wien. klin. Woch.*

#### LENGTH OF TIME CARBON DIOXIDE REMAINS IN THE BLOOD AFTER INTOXICATION.

EXPERIMENTAL research shows that forty-one minutes is the longest period, and sixteen the shortest, in which carbon dioxide can be detected in the blood of animals exposed to its toxic action.—*Deutsche. med. Woch.*

#### INFILTRATION OF THE NERVE CELLS BY LEUCOCYTES.

In the investigation of the tissues of some old dogs it was found that the leucocytes had penetrated into the interior of the nerve cells, especially those of the ganglia of the posterior roots, producing peculiar alterations in the neuron as the leucocyte gradually invaded and destroyed the nerve cell.—*Presse Méd.*

#### EFFECTS OF THE X-RAYS ON OSMOSIS.

In some recent experiments the ascent of the liquid was checked almost entirely by the action of the rays from the Crooke's tube. This effect on the osmosis may be the explanation of the alterations produced in the tissues by the X-ray.—*Presse Méd.*

## PERISCOPE.

### A BIFID NOSE.

DR. STEWART (*Jour. Laryn.*) describes a case of bifid nose occurring in a patient twenty-five years old. The patient stated that when a baby a tumour was removed from his nose. The case was not one of duplication of the organ. The mesial nasal process is bilateral in character. Naturally this groove was obliterated by the approximation and coalescence of the lateral portions. In this case the growth of a cyst between the lateral portions prevented the coalescence, and produced the bifid deformity.

### EUSTRONGYLUS GIGAS.

DR. R. J. ALLEN reports a case of recurring and profuse hæmaturia in a man eighty-seven years old (*Australasian Med. Gaz.*), occasioned by *Eustrongylus gigas*. The specimen, which was found in the urine, was  $5\frac{1}{2}$  inches long, and frayed out at the attenuated extremities. This parasite is exceedingly rare in man. Davaine ("Traité des Entozoaires") found only seven cases in medical literature. Since then Dr. R. Cameron (*Lancet*, 1887) reported the passing of one by a boy seven years old, and M. Magneur reported (*J. de M. de Bordeaux*, 1888) the passing of a male specimen by a child only two years old. Although the eustrongylus has been recognised as a human parasite, its history was not made known until J. G. Bremser published his "Traité Zoologique," in which he gives some beautiful copperplate engravings of the male and female parasites. Fifty years afterwards the engravings and descriptive letterpress, with some fresh matter, were published by Küchenmeister in his "Manual of Parasites," a translation of which was published by the Sydenham Society in 1858. Bremser regards the following cases of eustrongylus gigas as undoubtedly true:—1. That of the Archduke Ernest of Austria, who died in 1595, as Governor of the Netherlands, and in whose kidneys Hugo Grotius found a stone and a still living worm. 2. The case of Ruysch, who was already acquainted with this worm in dogs. 3. The case of Blasius, who found one in the kidneys of an old man. 4. The case of Alberch, who saw a soldier, after seven days' retention of urine, pass a worm three fingers long, and of the thickness of a quill, through the urethra, with immediate relief. 5. The case of Raisin, in which a worm 3 inches long passed from

a man fifty years old, after two years of renal colic, with bloody urine. 6. The similar case of Duchateau. 7. The case of Rhodius, who saw a round living worm, of a span long, passed with the urine, without any previous or subsequent disorder, from a man prostrated by a violent fever, on the fifth day of his illness. Cases 8–12 are those of Chapotain, Monceau, Haller, Renner, and Schenk. 13. The case of Hähne, in which a case occurred in the thoracic cavity. 14. The case of Moublet. A boy who had been freed from a calculus in the bladder, in his third year, by Moublet, was attacked in his tenth year by a violently painful swelling in the region of his groins, with scanty secretion of urine. Much pus flowed from the opened tumour, and the wound healed up. The disorder was renewed repeatedly for three years, and the operation was repeated. At last a worm five inches long, and of the thickness of a quill, came out of the wound, and finally a second worm, four inches long, but then complete retention of the urine occurred, until two similar worms passed shortly after each other, and a perfect cure was the result. The female worm sometimes attains to a great length. Küchenmeister states that a specimen in his possession was nineteen inches long, and Ebstein states that a specimen found in a dog measured twenty-five inches.

#### DEATHS UNDER ETHER.

In a paper read before the Toronto Medical Society, Dr. Oldright (*Canadian Practitioner*) states:—Henry M. Lyman, of Chicago, an advocate of ether, says that the risks from ether increase with age, on account of the tendency to bronchial catarrh, to a degree which is not conspicuous with the more potent agent chloroform, and cites cases of œdema with lingering death from the administration of ether, one of œdema of the lungs and pleuræ, operation tenotomy, administration for twenty minutes, amount 3 oz., becoming conscious and dying two hours later; another dying four hours after cessation of administration, the *post-mortem* examination revealing œdema of the membranes of the brain and of the lungs.

#### SUDDEN DEATH FROM RUPTURE OF A HYDATID CYST INTO THE RIGHT AURICLE.

At a meeting of the New South Wales Medical Association (reported in the *Australasian Medical Gazette*), Dr. Jamieson, of Sydney, read the following paper:—“On October 18th, 1897, I received a message from the City Coroner asking me to proceed to

Redfern, and there make an investigation into the cause of death of a boy aged nine years, who, whilst in the midst of apparently good health, had suddenly expired. On my arrival at the house of the parents, in reply to my queries with reference to the boy's antecedents, I received the following statement from the father:—"The boy had always enjoyed the best of health; was nine years of age, and had never, as far as the father knew, in any way complained of ill health. He had never been laid up a single day. On the day of his death he was playing with some of his schoolmates all the afternoon; about six o'clock he came home and had his tea. Shortly afterwards he was taken suddenly ill, and became very breathless and livid, and in a short time died." *Post-mortem*.—I found the cause of death to have been the rupture of a hydatid cyst, about the size of a small orange, into the right auricle. On opening the right side of the heart, the cavities of the right auricle and right ventricle were found to be filled with daughter cysts, and a large daughter cyst was also found completely blocking the right pulmonary artery. A number of other cysts, unruptured, were also found beneath the epicardium, two of these being in close relation to the left ventricle. Otherwise the body showed no evidence of disease. The boy was a native of Redfern, and had never been out of Sydney. A sister had been operated on some years previously for hydatids of the liver." Dr. Jenkins said he exhibited a somewhat similar specimen at a Branch meeting some ten years ago. Dr. Guy Warren sent the specimen. The man had had no previous symptoms; he was digging in the garden, and fell dead. The *post-mortem* examination showed a similar condition as that described by Dr. Jamieson.

#### IDIOSYNCRASY.

DR. OLDRIGHT, of Toronto, states that the celebrated *prima donna*, Jenny Lind, would almost faint from the smell of a rose thrown on the stage.

#### BRONCHO-PNEUMONIA PROPHYLACTICA.

DR. GASTON-LYON recommends a perfect cleansing of the nose, and afterwards the painting of each nostril with the following pigments:—Sweet oil of almonds, 40 parts; menthol, 1 part.—*Mix.*—*Revue de Therapeutique.*

#### DYSPEPSIA FOLLOWING NASAL CATARRH.

IN a contribution to the *St. Louis M. and S. Journal*, Dr. Rumbold draws attention to the effect of the swallowed nasal secretion on



the stomach. Like its companion, nervous prostration, the disease thus produced in the stomach is always worse in the spring and autumn—that is, during the seasons when colds in the head are most frequently taken.

#### FOREIGN BODY IN THE URETHRA.

DR. GUINARD (*Bull. Soc. Ann., Paris*)—A man, twenty-seven years of age, introduced into his urethra a long hairpin, the extremity of which within the urethra was curved, and presented a free extremity pointing to the orifice of the urethra. An external urethrotomy was performed, and the patient made a good recovery.

#### STOMATITIS FROM THE USE OF PHENAZONE.

M. DALCHE (*Soc. Méd. des Hôpitaux*) reports a case of stomatitis following on a dose of phenazone. The unpleasant effects were quickly relieved by the use of a boric acid mouth wash. M. Dalche said this was only one of some similar cases that had occurred in his practice from the use of the drug.

#### VOMITING FOR EIGHTEEN YEARS—ABDOMINAL SECTION—CURE.

DR. NAYLOR, Hobart, Tasmania, reports the following in the *Australasian M. Gazette*:—Miss S., native of Tasmania, aged 44 years, came under my treatment about ten months ago. She told me she had been vomiting all her food at irregular intervals daily for eighteen years. No neuritic history anywhere in the family. Lately the vomiting had been more frequent. I put her to bed for three months, and fed her systematically with peptonised food, washing her stomach daily with the siphon tube. I suggested to herself and relatives that there was an obstruction at the further end of her stomach. After three months I let her go home, and advised her to continue the washing and to take the bismuth as before. At or about the middle of September I saw her again, and I noticed she was much thinner. At this time, through her attenuated abdominal wall, I thought I felt an indurated pylorus. I now made preparations for an abdominal section. I opened up the abdomen in the middle line for five inches. After opening the parietal peritoneum, I introduced my hand into the abdomen and felt for the pylorus, but found it deep down and firmly adherent to the liver; on examining the stomach I found it was empty, flaccid and not at all enlarged. I tried to draw the stomach out into the wound, but could get it only slightly forward, and found it tied down by adhesions to the bowel below. I separated these adhesions and liberated the greater part of the

stomach, and got the greater portion now fairly into view, but could not move the pyloric end, as it was firmly adherent to the under-surface of the liver. I opened the stomach by a vertical incision about an inch and a quarter long. I then passed my finger along towards the pylorus and through it into the duodenum without finding the trace of a stricture. I have no doubt that the real cause of the sickness of such an intractable nature was the existence of the adhesions, part of which I relieved; at any rate, the result justifies me in thinking so. This lady would undoubtedly have died of starvation if I had not made a mistaken diagnosis and decided to do a pyloroplasty.

#### ABSCCESS OF THYROID COMPLICATING PLEURISY.

HERBERT C. BARCLAY, M.D., F.R.C.S. Ed. (*Aust. Medical Gazette*), draws attention to a case of this disease. The patient was a tall, well-built man, 37 years of age. At the first examination a goitrous neck was noticed, but it did not call for special attention. The physical signs were almost *nil*. He had great pain in the right lower chest, aggravated by a deep breath. No friction sounds were audible, and the dulness was but slightly marked. His chest was strapped, and this eased the pain, which was otherwise constant. On the morning of the third day he got *suddenly* worse. Difficulty in breathing became extreme; he was cyanosed, perspiration poured off his face, and his hands were blue; pulse very feeble and rapid, while a swelling on the left side of the neck, the size of a fist and well defined, and connected with the thyroid (as judged by deglutition), had appeared in the course of an hour, the superficial veins being markedly distended. He seemed practically moribund. On the third day of this attack some swellings of the thyroid occurred, but not nearly so marked as previously, and though his pulse was watched half-hourly all night, he collapsed suddenly, and died in the course of half an hour. A *post-mortem* revealed generalised pleurisy over both lungs. Most of the pleura was covered with yellow, chamois-leather-like lymph in a thick layer. At the lower part of the right cavity, covered in by surrounding adhesions, was a pocket of pus containing about 3i. to 3ii. in all. This was the site of the constant severe pain. The thyroid was greatly enlarged, one side of it being diffuent and verging on pus, the other side being represented by an abscess sac, from which fluid spurted on section. The pus contained streptococci in abundance, but diplococci were not to be seen.

## NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

### *The Artificial Feeding of Infants.*

THE Aylesbury Dairy Company, Limited, 31 St. Petersburg-place, Bayswater, London, W., sixteen years ago undertook the preparation of humanised milk at the request of several members of the medical profession, and made it correspond in composition with the average human milk. Though, in the majority of instances, this humanised milk was retained and well digested, there occurred from time to time cases in which it was not so successful; in some of these cases, at the request of the medical attendant, the Company prepared a special milk of a composition suited to the particular needs of the infant.

About three years ago the Company adopted the method of preparing two strengths of humanised milk, No. 1 containing about 1·4 per cent. of proteids, and No. 2 containing 2·2 per cent., the other constituents being kept at about the average found in human milk. The result was very gratifying.

The Company now propose to amplify the idea which led to the preparation of two strengths of humanised milk, and have opened a new department, in which humanised milk is dispensed from physicians' prescriptions.

It has been arranged to prepare milk containing any prescribed percentage of fat, milk sugar, and proteids; the proteids may be either those normal to cow's milk (i.e., casein and albumen in the proportion of 7 to 1), or modified by a proteolysing (not peptonising) process so as to be more digestible and to give a more finely divided curd when acted on by the milk curdling enzyme of the stomach. The reaction to litmus-paper may be either the normal amphioteric one of cow's milk or the faintly alkaline one of human milk.

Within the limits of their London delivery the Company can, if desired, supply the milk in a Pasteurised condition, the amount prescribed for each meal being contained in a separate bottle. It is, however, safer to use the milk sterilised by their ordinary process and supplied in their patent vacuum stoppered bottles.

Outside the limits of their delivery they can supply it only in the sterilised condition; a quantity sufficient for each meal can

be supplied in a separate bottle, or it may be put up in 10 oz., 20 oz., and 40 oz. bottles.

When milk is sent long distances by rail, especially in the summer, a portion of the cream is liable to be churned into butter by the shaking received during transit. This, though not diminishing the percentage of fat in the milk to any great extent, causes inconvenience, and if the fat be not removed it is difficult of digestion. To obviate this, the Company recommend the use of their new system. They supply—

- (a). A small bottle containing cream in which the total amount of fat is  $\frac{3}{4}$  oz. (or any definite amount).
- (b). A bottle containing separated milk, or proteolysed milk (as prescribed).
- (c). A bottle containing a solution of milk sugar in distilled water, together with any alkali, &c., prescribed.

The quantities in (b) and (c) can be adjusted, so that on mixing the entire contents of the three bottles one pint of humanised milk will result, or the Company can supply them containing 10 ozs., so that the medical adviser may, if he thinks fit, vary the composition by directing that the contents of (a) be mixed with measured quantities of (b) and (c). They issue to the physician a card specifying the composition of (b) and (c), together with a table of the quantities to be added, to save calculation.

The Company are prepared, in addition, to undertake the analysis, free of charge, of any samples of human milk that may be submitted to them by medical men, with a view to guiding them in their course of treatment.

Finally, the Company draw attention to the facts—

- (1). That all their farms are periodically inspected by the Medical Officer of Health for the district.
- (2). That they are provided with water supplies which have been approved both by the Medical Officer of Health and by their Analyst.
- (3). That in the case of suspicion of infectious disease at any farm, the milk supply from that farm is immediately stopped.

## **In Memoriam.**

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**SAMUEL GORDON, M.A., M.D. Univ. Dubl.;**

**EX-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND,**

**AND OF:**

**THE ROYAL ACADEMY OF MEDICINE IN IRELAND.**

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NOT for many years has a member of the medical profession passed away amid such tokens of widespread sorrow as those which followed SAMUEL GORDON to his last resting-place. Full of years and honours he "fell asleep" on Friday, April 29, 1898, in the eighty-third year of his age.

On Thursday, March 31, DR. GORDON was in his wonted excellent health and lively spirits. Early next morning he was attacked with rigors, vomiting, and a transitory diarrhoea. Notwithstanding, he went about his work as usual until his strength failed, and he took to bed in the afternoon, complaining of intense pain in the left side of the chest. In a few days physical signs of an acute left pleuro-pneumonia showed themselves. From this attack the patient rallied to some extent, so that his many friends rejoiced to think that, after all, his life might be prolonged. Complete anorexia, however, was followed by extreme prostration, and life gradually ebbed away, the end coming just four weeks after the onset of the illness.

SAMUEL GORDON was born on January 19, 1816. He was the fourth son of Mr. Samuel Gordon, of Spring Gardens, Clonmel, Co. Tipperary, by his wife, Jane, daughter of Mr. Keily, of Strancally Castle, Co. Waterford. He entered Trinity College, Dublin, at a very early age, and graduated as B.A. of the University of Dublin in 1837, proceeding to the degree of M.A. a few years later. In 1843 he obtained the Letters Testimonial of the Royal College of Surgeons in Ireland, of which body he was co-opted a Fellow on January 7, 1845. He took the degree of M.B. in the University of Dublin in 1844, and in 1877 he became M.D., *stipendiis condonatis*. In 1847 GORDON was appointed Physician to the House of Industry Hospitals, in which he had as an undergraduate served as Clinical Clerk to Dr. (afterwards Sir Dominic) Corrigan.

## In Memoriam.

The earlier years of GORDON's professional life were devoted to the practice of surgery, in which he showed no little proficiency and skill. As time passed by, however, he resolved to turn his attention exclusively to medicine, and so he became Licentiate of the Royal College of Physicians of Ireland on May 1, 1860, being elected a Fellow on October 6th, 1865. From October, 1875, to October, 1878, he filled the Presidential Chair of the College with great distinction.

DR. GORDON in succession was connected as Lecturer with the Cecilia-street, Steevens' Hospital, and Carmichael Schools of Medicine. He in turn became President of the Carmichael College of Medicine, and also President of the Pathological Society of Dublin. He was elected President of the Royal Academy of Medicine in Ireland in 1888, and subsequently he served as President of the Royal Zoological Society of Ireland. In addition to his appointment in the House of Industry Hospitals, DR. GORDON was Physician to the King's Blue-coat Hospital, and St. Patrick's Hospital for the Insane. He was also a Consulting Physician to the Coombe Lying-in Hospital.

For several years GORDON was Editor of the *Dublin Hospital Gazette*, and he contributed many valuable papers to that journal. In the pages of the *Dublin Journal of Medical Science* several important communications from his pen appeared from time to time. The chief of these were on Fevers and their Complications, and the Treatment of certain forms of Pneumonia by Quinine in large doses.

DR. GORDON married Sophia Louisa, daughter of the late Thomas Montgomery, Captain in the Royal Navy. By her he leaves one son, Dr. Samuel Thomas Gordon, F.R.C.P.I., Surgeon to the Royal Irish Constabulary, and nine daughters. Every member of his family watched by his bedside during his fatal illness.

A skilful and trusted physician of vast experience, DR. GORDON played an honourable part in the history of Medicine in Dublin for many years. His genial, kindly, and sympathetic presence will be sorely missed in the sick room. In private and social life he filled a no less conspicuous position. An excellent *raconteur*, he never told a story which inflicted a rankling wound or hurt the tenderest susceptibility of his hearers. A trusted and faithful friend, he passed away in a ripe old age—loving and beloved—universally respected and mourned by all who had the privilege of knowing him.

J. W. M.

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